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THE REPAIR OF INGUINAL HERNIA*†

By WALTER D. WISE, M.D.
BALTIMORE, MD.

The numerous articles appearing on the treatment of inguinal hernia, the seeing of recurrences and the fact that there is no standard operation, indicates that the results are not as yet entirely satisfactory. It is not with the purpose of advocating something new that this short article is presented, but rather to recommend an operation thought to be worthy of more general acceptance. The operation has been used uniformly in patients over 20 years of age since 1918, and, with excellent results.

The essential steps, as done by us, briefly stated, are as follows: the skin incision is a trifle further above Poupart's ligament than that usually used, as is the incision in the external oblique, so as to obtain a broad lower flap of external oblique aponeurosis. The cremaster and the cremasteric fascia, the infundibuliform fascia, and any adventitious layers of fascia covering the sac and sper-

*In the chapter on hernia of Nelson's Loose Leaf Surgery, which was distributed after this article was written, there is a description by Seward Erdman of this procedure.

†Read before the Baltimore City Medical Society October 5th, 1928.

matic cord are carefully split, dissected free and preserved. The sac is dissected free in the usual manner. A large part of the dissection is done with the sac open and the finger inside. With this finger an investigation is made of the internal or lateral ring, the strength of the transversalis fascia, and, particularly whether there is also a direct sac or anomaly of the indirect sac.

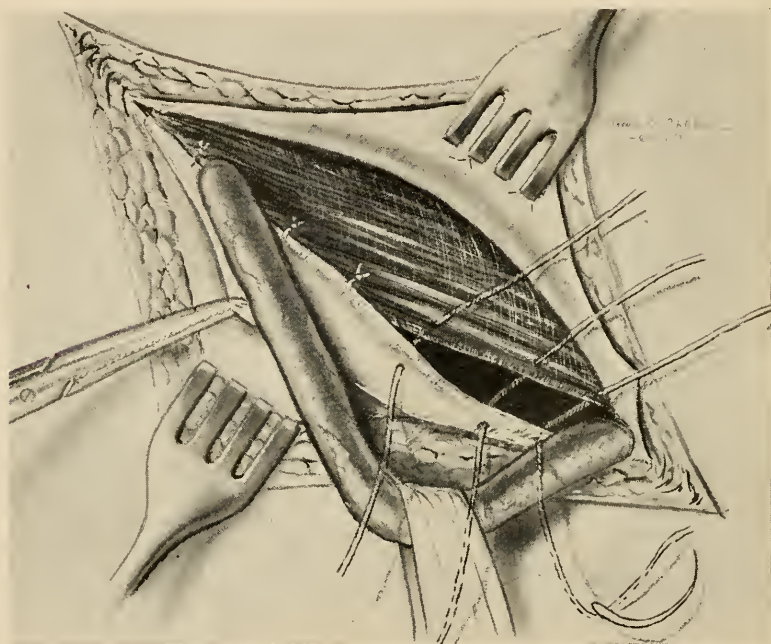


FIGURE 1—Showing the internal oblique muscle and conjoined tendon being sutured to Poupart's ligament beneath the cord. An attempt is made to place the muscle under the shelving edge of Poupart's ligament.

In quite a percentage of cases of indirect hernia a careful examination of the sac region above the neck, or the fibrous circle where nature has attempted closure, will show a diverticulum or pouching that would seem a favorable starting place for a recurrence. A slight lift of the sac with the finger inside, and a little dissection, will show this above described situation in many cases. This diverticulum is removed with the sac as high as possible. The ligated

pedicle is transplanted outward or not, as seems necessary. The cord is then lifted and held out of the way by a broad wet tape or sponge, never with a ligature for fear of damaging the intima of the veins and causing thrombosis.

If the transversalis fascia is of sufficient thickness and strength, it is sutured. The cremasteric muscle and fascia are now sutured

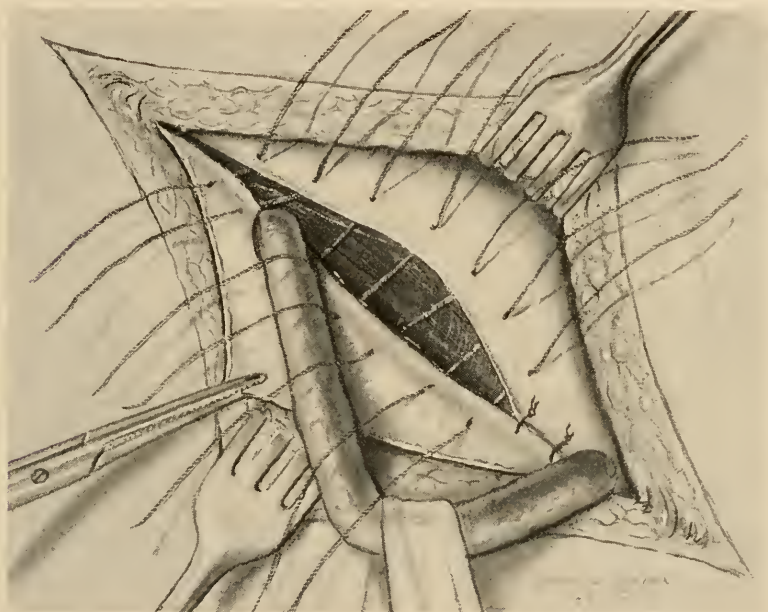


FIGURE II—Showing the upper flap of the aponeurosis of the external oblique being sutured to Poupart's ligament beneath the cord.

either edge to edge under the cord, or the lower edge is carried under the margin of the conjoined tendon and internal oblique. The next step is to bring down the internal oblique and conjoined tendon to Poupart's ligament, as is done in the Bassini, or any other operation where there is transplantation of the cord, being sure, however, to get deep, or far posterior, in placing the sutures in Poupart's ligament, and, being sure there are no structures such as cremasteric muscle between the two structures being sutured. The upper leaf of the external oblique is next sutured to Poupart's liga-

ment, the sutures being placed between those previously inserted. The lower leaf of the external oblique, or that part attached to Poupart's ligament is now carried up and overlapping the upper leaf, is sutured to it. All of these layers are beneath the cord, which is left subcutaneous and treated in the manner shown in the illustrations. The superficial fascias are closed with plain catgut.

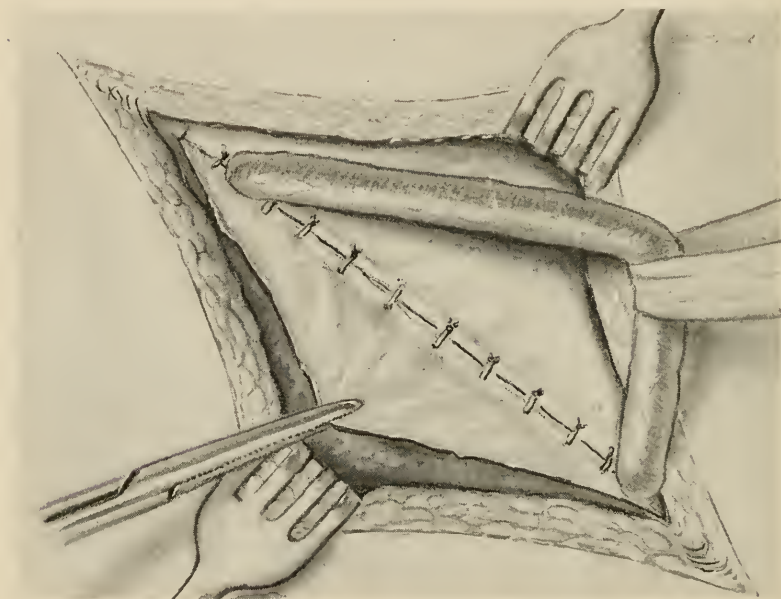


FIGURE III—Showing the upper flap of the external oblique aponeurosis sutured to Poupart's ligament. The cord between sutures after being carried lateral to its normal point of exit.

If the cord has a tendency to make too sharp an angle over the edge of the lower leaf of the external oblique, it is prevented by holding it in a gradual curve with sutures in the subcutaneous tissues.

This operation is done uniformly in direct hernias and in all indirect hernias, except in children and adolescents. It has been used in the type of direct hernia that is often spoken of as inoperable, and has been used in recurrent double direct hernias with

great satisfaction. In those cases in which there is dearth of conjoined tendon, rectus fascia is turned down to Poupart's ligament and the operation concluded as described.

The repair of inguinal hernia by any method is more satisfactory in the female than the male, but the occasional recurrence makes it advisable to use all available structures to the best advan-

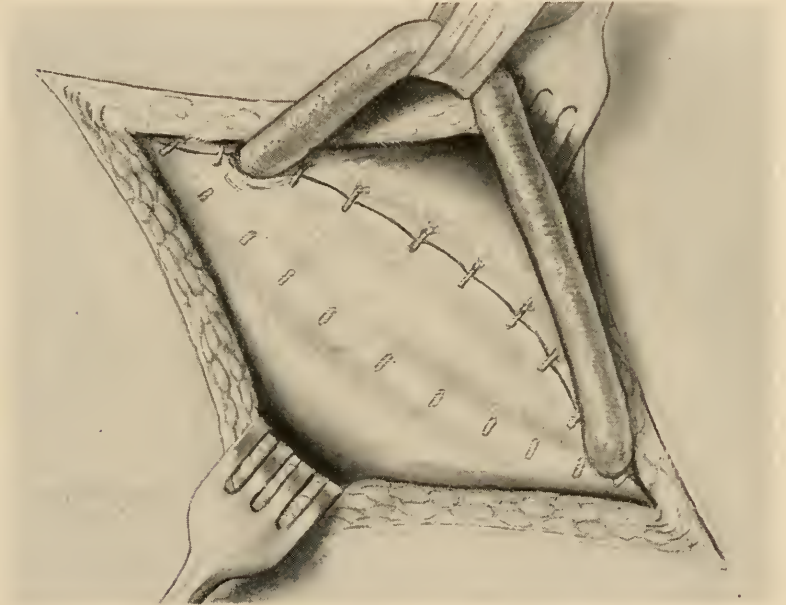


FIGURE IV—Showing the lower flap of the external oblique aponeurosis overlapping the upper flap. The cord emerging between sutures with no transverse slit in the lower flap as is sometimes recommended.

tage and it is felt that this is accomplished by this operation. It is not well suited to cases of undescended testicle, but most of the operations in these cases are done in childhood or adolescence when recurrence is not apt to take place.

Care is taken to free all structures that are to be approximated, of areola tissue, a point considered by Koontz and others to be of great importance in assuring union.

This relatively simple procedure has been brought before you because it does not seem to be in common use and it seems to embrace some of the important principles of repair that more elaborate procedures are being recommended to accomplish.

Many surgeons have had serious doubts as to uniformly firm union occurring between sutured muscle and fascia:—This proced-



FIGURE V—Showing the sac dissected free to the internal or lateral ring. A finger in the sac—though the ring shows a pouch that, when present, can readily be removed as part of the sac.

ure gives a broad approximation of fascia to fascia. The utilizing of the external oblique aponeurosis in this manner should obviate the necessity of free fascia transplants or other foreign material except sutures and ligatures.

Some of the illustrations are modifications of those in an article by Stetten in the *Annals of Surgery*, June, 1920.

GRANULOMA INGUINALE

By HARRY M. ROBINSON, M.D.

BALTIMORE, MD.

For many years, granuloma inguinale was believed to be endemic in the South, and the earliest name given to the condition following the report by Conyers and Daniels (who called it a lupoid form of groin ulceration) was granuloma inguinale tropicum. In the past several years, however, reports of cases have come from the northernmost points of the United States and from parts of Canada, so that the term "tropicum" should no longer be used. Furthermore, while the greatest proportion of the cases is usually seen in the genito-crural region, the condition has been noted in other parts of the trunk and on the face, and therefore, the term "inguinale," while a popular one, and generally used, is being replaced or supplemented with such names as ulcerating granuloma, sclerosing granuloma, and ulcerating and sclerosing granuloma; such names as ulcerating granuloma of the pudenda, serpiginous ulceration of the genitalia, granuloma venerium, etc., have also been applied. As mentioned above, the condition, while more common in the tropics and sub-tropics, is found throughout the entire temperate region, more particularly where there is a large negro population. All investigators have noted a higher incidence of the condition in the negro race.

CLINICAL CONSIDERATION

The condition, when seen by the physician, is usually a chronic, ulcerative process, indurated, with marked cicatrization, and with a more or less serpiginous margin. In my group of twenty-three cases, a history was obtainable in some, that the condition began as a papule (pimple); and in two cases, such an early non-ulcerated nodule was present at the time of our physical examination, in addition to already existing, fully developed granulomata. There was a fairly constant history of itching in practically all cases, with scratching; but even without the scratching and abrasion, these

popular lesions soon ulcerate and become granulomatous. The margin develops a hard, sclerosed, serpiginous formation which is nodular and has a reddish glazed appearance.

In our cases, and in those of Fox, there has been little or no tendency to spontaneous cure or involution, and unless treatment is instituted in the early stages, there is a marked tendency to spreading and coalescence with the formation of large, superficial, granulomatous ulcers, the margins of which are serpiginous, nodular, and sclerosed. As a rule, there is no associated lymph gland enlargement. Usually, there is exudation in the form of a thin, sanious fluid, the odor of which is usually foul. Pain is frequently severe, and generally the patient dreads having the lesion touched, the slightest touch causing pain. As a rule, there are no constitutional symptoms, such as temperature, malaise, anorexia, or loss of weight. The involved parts are usually enlarged, having a pseudo-*elephantiasis* appearance.

In our experience, relapses are frequent, there being thirteen cases of relapses after apparent healing had taken place.

ASSOCIATION OF SYPHILIS

Although at first believed to be a type of, or associated with, syphilis, it was soon found that the lesions of granuloma inguinale did not respond to anti-syphilitic treatment, and even though some of the organisms found were spirochaetes, it has since been demonstrated that they have no relationship to the *Spirochaeta pallida*. A few of our cases have given a positive Wassermann reaction, and anti-syphilitic treatment was instituted, as the treatment of choice, but in spite of intensive combined arsphenamine and bismuth treatment, no improvement resulted in the lesions until the administration of tartar emetic. On the other hand, healing has taken place under tartar emetic without any anti-syphilitic therapy.

ETIOLOGY

Donovan, in 1905, reported peculiar intra-cellular bodies which he thought to be protozoa and which were called, and have since been known as Donovan bodies. In 1918, Walker also demonstrated these organisms and considered them encapsulated bacteria of the

type of Friedlander's *Bacillus mucosus capsulatus*. In 1925, Cornwall and Peck cultured, inoculated, and recovered like organisms; and lately, Gage has accomplished the same result.

The Donovan bodies are pleomorphic organisms, coccoid to bacillary in shape, non-motile, non-sporulating, measuring from 0.5 to 2.0 micra in diameter, gram negative, and staining readily with Wright's stain. They are found usually in pairs or large groups, in the epithelial cells of the stratum Malpighii or in macrophages. They grow best on Sabouraud's medium.

It is to be noted, however, that there are investigators who deny that these so-called Donovan bodies are the causative bacteria.

CONTRIBUTING ETIOLOGY

As above mentioned, the condition, while most prevalent in southern climates, has been frequently found in the northern parts of this country. It is claimed, however, that many of these cases that are found in the north, may have contracted the condition in the south. It almost always affects negroes, and of these mostly women, although occasionally found in white patients. It is a disease of adults, and is rarely seen before puberty. The ages of our cases ranged from sixteen to fifty years. The average age was thirty.

DIFFERENTIAL DIAGNOSIS

In the differential diagnosis of this condition, only ulcers need be considered and excluded. The commonest of these are syphilitic (chancre, condylomata lata), and epitheliomatous.

Chancre: This is usually an indurated, infiltrated, single, circumscribed lesion, without serpiginous margins, with very little discharge and rarely any odor, painless and with markedly enlarged, satellite lymph glands. The *Spirochaeta pallida* can be demonstrated by dark field examination. The incubation period is ten to twenty-one days.

Condylomata: These are practically always raised. The top of the lesion is flat. It never ulcerates. It is covered with a grayish exudate, and is without a distinctively raised margin. There is very little pain and no discharge. The *Spirochaeta pallida* can be readily demonstrated by the dark field.

Gumma: In this condition, there is a history of a deep-seated nodule, breaking down, forming a more or less punched-out ulcer with steep margins. There is a slight discharge and no pain. Ordinarily, a history of past syphilis is obtainable. The Wassermann test is usually positive, and the condition responds to anti-syphilitic treatment.

Condylomata acuminata or venereal warts: This condition should offer no difficulty in differential diagnosis as the lesion, discrete or confluent, is always warty or papillomatous, without discharge, and without induration. Etiologic organisms cannot be demonstrated, and the lesion does not respond to anti-syphilitic treatment.

Chancroid: These ulcers are well-defined, variable in size, single or multiple, auto-inoculable, very painful and with painful, fluctuating lymphadenitis. There is very little induration; the floor of the ulcer is granular, bathed in pus; and a reddened, inflammatory areola is usually present. The incubation period is from one to two days.

Epithelioma: There is usually no history of venereal exposure. The condition occurs, as a rule, after the age of forty, with a history of a slow-growing, slowly crust-forming papule. While there is always a well-defined margin, usually pearly, this is never serpiginous. There is frequently little excess granulation tissue and very little, if any, pain. Exudation is slight or absent. It occurs more frequently on the face, and is but rarely seen in the inguinal region.

In contrast to these, granuloma inguinale presents one or more, variously sized, confluent ulcerations, involving mainly, the pudenda (see Figure 1) with much granulation tissue, and surrounded by a raised, serpiginous, glazed border. There is marked pain, discharge, foul odor, and absence of enlarged glands. Donovan bodies can be demonstrated by smear or culture. It is seen almost exclusively in negroes.

TREATMENT

Since first used by Aragao and Vianna of Brazil, tartar emetic (antimony and potassium tartrate) has been the most efficient drug in this condition. Although the reports of beneficial effects from tartar emetic have been enthusiastic and numerous, there have been



FIG. 1. CASES OF GRANULOMA INGUINALE BEFORE TREATMENT

a few, including the author, who have been disappointed in the response to this drug. Frequent relapses have occurred.

We use a 1% solution of tartar emetic, Berkfeld filtered. The initial dose is 3cc. injected intravenously. This is quickly raised to 12 or 15cc. The injections are given twice or three times a week. In our series of cases, therapeutic response was variable. Five patients showed very poor results after five, six, eight, forty-five, and fifty-two doses of tartar emetic respectively. Two patients, after receiving fifty-five and forty-five doses, respectively, had the lesions thoroughly excised and a skin graft done, with good results. One of these is seen in Figure 2. The remainder of the patients showed appreciable, but slow, improvement, and two have remained healed for one year without further treatment.

We advise antimony treatment after the lesion has healed and after excision, where that has been performed. We believe that those patients who have failed to improve have not received adequate dosage.

We have had too little experience with antimony sodium thioglycolate, and the thioglycoamides to warrant any judgment on the value of the remedies.

PROGNOSIS

If the condition is seen and treated at an early stage, before there has been marked spreading, swelling, and destruction, the prognosis is good. The antimony products, if given continuously in large enough doses, and continued after the clinical healing of the lesion, will effect a cure. On the other hand, as will be seen from Figure 2, some patients respond slowly to treatment, and in others it is necessary to employ excision and grafting before a cure can be brought about.

COMMENTS

It seems probable that we have been too enthusiastic regarding the use of tartar emetic in the treatment of granuloma inguinale. If syphilis were to respond as poorly to the arsphenamines as granuloma inguinale to the antimony products, syphilologists would be in a very hopeless state of mind. It is our opinion that the efficiency



FIG. 2. BEFORE THERAPY—THERAPY (TARTAR EMETIC FOLLOWED BY EXCISION AND GRAFT)



FIG. 3. SLOW RESPONSE AFTER 6 MONTHS THERAPY (TARTAR EMETIC)

of tartar emetic may be enhanced by the simultaneous employment of excision with graft or X-ray therapy.

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CHILDREN OF ISRAEL

DIAGNOSIS AND TREATMENT IN SPINAL INJURIES

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The majority of back injuries are of relatively slight importance, and recovery occurs after a few days of rest. Back injuries of more severity are the cause of serious disability and prolonged pain. An occasional patient is encountered with symptoms of a very intractable type which tax the skill and patience of the surgeon. The majority of such back injuries occur at the dorso-lumbar or the lumbo-sacral region.

Traumatic conditions of the lumbar region receive less thoughtful consideration than most other injuries, and frequently no serious effort is made to differentiate muscular strains from ligamentous strains, or either, from fractures of the vertebrae.

Uncomplicated compressed fractures of the bodies of the lumbar vertebrae may follow slight injuries and produce very few symptoms. Frequently the symptoms may be that of a mild back strain. We are all familiar with minor fractures about the ankle joint which produce far less subjective symptoms than does a severe ligamentous strain of the ankle joint. The same occurs in regard to symptoms in injuries of the vertebral column. As the damaged structures of the vertebral column are so deeply situated, there is usually little if any objective evidence of trauma. Limitation of motion is a constant sign, and all patients showing limited motion should not be diagnosed strain, until after an X-ray picture in two planes is taken. While pain referred to the point of injury is the most frequent subjective symptom, in some fractures pain may be of little moment.

Of 121 patients with severe back injuries treated during the past twelve months, only sixteen showed a fracture of one or more vertebrae. In only two of the sixteen patients, showing fracture, were there any evidences of spinal cord injury or irritation. In two patients with fractures, pain was an insignificant symptom. Two

patients had been treated elsewhere over a period of months as back strain. Of the fourteen patients with fractures, without neurologic symptoms, the majority would have been treated as back strains if all cases complaining of pain in the back, associated with involuntary rigidity were not routinely X-rayed.

Due to the fact that fractures of the transverse processes and chip fractures of the bodies of the lumbar vertebrae occur from extreme muscular action, and in the absence of any apparent severe trauma, and sometimes even without a history of a fall or blow, they are frequently not diagnosed, but are treated as back strain, sacro-iliac strain, etc. Frequently with a history of so slight a trauma, and with little objective or subjective evidence of injury, an X-ray picture may, by some, seem an unnecessary expense. Such cases are treated as back strain over a period of months with continued disability, and may be diagnosed eventually as traumatic neurosis. Fractures of the vertebrae in the absence of neurologic symptoms can be differentiated from strains only by the X-ray. Both lateral and anterior views are imperative.

The X-ray of course shows no pathology in either muscle or ligamentous strain immediately following the injury. However, ligamentous strains or tears will, upon repetition of the X-ray two to four months later, often show a fuzzy lipping at the site of trauma to the longitudinal ligaments or to its adjacent fibrocartilage—a traumatic osteoarthritis. This care in having X-rays taken at the time of a very slight back injury for further reference may be of great importance in the compensation case, both to the employee and employer.

The differentiation between ligamentous and muscular strains may be often difficult, if not impossible, as frequently the two conditions coexist. In a large percentage of patients, however, a more careful examination will aid in determining the pathology present.

Ligamentous strains vary with their severity. They are produced by overstretching of the spinal column, sudden pronounced muscle pull, or to external violence. If there be no accompanying muscle trauma, the symptoms may be pronounced early as the accompanying muscular rigidity may quite satisfactorily immobilize the spine and prevent motion to the injured area, as long as the patient

remains relatively quiet. Pain due to ligamentous rupture is usually intense, deep seated and is elicited by either active or passive motion or by rotation of the spine.

Muscular strains unaccompanied by ligamentous rupture or injury, are definitely tender on digital pressure. All movements in which the injured muscle actively participates produce severe pain, Passive movements, however, in the same direction, with an effort made by the patient at relaxation, are relatively painless. To illustrate: If the strain is only of the *right* quadratus lumborum muscle, active *right* lateral flexion of the spine will produce severe pain. However, if while lying on his back the patient attempts to relax, and the spine is laterally flexed to the *right* by passive motion, relatively little pain will be experienced. On the other hand *left* lateral flexion, made either actively or passively, will produce pain of the same intensity due to tension being placed on the injured muscle. By digital pressure and by careful examination by active and passive motion the muscle or group of muscles traumatized, may be determined.

The treatment of severe muscular strains is immobilization until the acute symptoms have disappeared. Immobilization should not be continued longer than two weeks. Recovery should then be hastened by the application of heat, by gentle massage and by active motion. Uncomplicated muscle strain should require neither the breaking up of adhesions, nor the aid of a supporting belt.

Severe ligamentous strains, and fractures uncomplicated by neurological symptoms require immobilization and recumbency over a period of four to six weeks. As in fractures and severe strains involving joints of the extremities, prolonged immobilization predisposes to the formation of adhesions and continued limitation of motion. Following this period of immobilization is the important period of mobilization of the spine. The patient should now be fitted with a removable plaster jacket or spinal brace, which can be removed daily for physical therapy and for exercise. Physical therapy should consist of heat to the area involved. This may be given in the form of diathermy, infra-red or radiant heat, and should be followed by massage and by gentle passive and later active motion. Contraindications to the use of exercise is the same as for

joints elsewhere; that is the return of involuntary muscular rigidity producing increased stiffness of the spine following exercise or manipulation.

A spinal brace should be worn in the majority of cases for at least three months. In a small percentage of patients a support may be necessary for a period of years.

Adhesions frequently follow ligamentous tears and fractures of the vertebrae. Just as in fractures elsewhere adhesions are largely preventable by early massage and by active and passive motion. Prolonged immobilization without daily massage, daily passive or active motion, with resultant adhesions may be attributed as the cause of a large percentage of continued pain in back injuries.

In traumatic conditions of the knee or elbow we do not hesitate to start early motion to prevent limitation of motion. In a patient treated for an extended period of time by immobilization of those joints with resulting limitation of motion we do not hesitate to give the patient an anesthetic and forcibly flex and extend the part. The same treatment may be necessary in adhesions of the vertebral column. Unless these adhesions are broken up which follow prolonged immobilization, by gentle manipulations, continued disability results.

The patient is placed on his back and if the pain is severe may be given an anesthetic. With the knees and hips flexed, the spine may then be gently flexed anteriorly, laterally right and left and hyperextended. It is then rotated. This gentle manipulation should be followed by daily active exercises to prevent reformation of adhesions. Until the routine breaking up of adhesions is practiced, patients will continue to seek relief from adhesions through various medical cults. A patient should not be forced to seek elsewhere for relief of adhesions of the spine, any more frequently than he should for relief of adhesions of any other joint. It should be remembered that adhesions resulting in limitation of motion will occur in any joint of the spine or extremity following trauma and prolonged immobilization, but these adhesions are largely preventable by the use of early motion. When such articular movements are limited, by prolonged immobilization, forced manipulations are necessary to restore function.

Mobilization is as important in the treatment of spinal injuries as is immobilization. Mobilization should include the forced breaking of adhesions where there is limitation of motion and prolonged pain, which cannot be attributed to arthritic conditions or which is not of unquestionable functional origin.

Summary: The routine X-ray examination of the spine in two planes following spinal injuries is the only means of positive diagnosis in fractures of the vertebrae, in the absence of neurological symptoms.

A more careful effort should be made to differentiate between fractures, and ligamentous strains, and muscular strains.

Prolonged immobilization predisposes to the formation of adhesions, with resulting continued symptoms. Mobilization and the forced breaking of adhesions is as essential in the treatment of limited motion following injuries to the spinal joints as it is in joints of the extremities.



GENUINE AMERICANS

1. Eliza L. Winslow
2. Randolph Winslow, M.D.
3. Eliana Randolph Winslow.

A STATISTICAL AND COMPARATIVE STUDY OF CÆSAREAN SECTIONS AT THE SINAI HOSPITAL*

BY WILLIAM SCHUMAN, A. B., M. D.,
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The following paper is the result of a study of Caesarean sections performed in the Sinai Hospital from January 1, 1923, to April 30, 1928, a period of $5\frac{1}{3}$ years, during which time there were 3,435 deliveries, eighty of which were performed by the abdominal route. These eighty Caesarean sections represent largely the private service of five or six obstetricians, about 15 per cent. comprising ward cases. This is a small percentage, considering that about thirty per cent. of all deliveries are on the dispensary service. While this work has been handicapped by incompleteness and in some cases by absence of hospital records, the data obtained (especially from the more recent cases) proved sufficient for an interesting survey, especially from the point of view of results and from the standpoint of comparison with other clinics, private and teaching. If this paper has done nothing else, it has at least removed some of the dust from charts long since touched by human hands. Nothing has given me more delight than roaming over these past records, nor do I remember doing anything more instructive since I began the study of medicine. Never before have I realized to such an extent the importance of carefully kept, accurate-in-detail hospital histories.

INCIDENCE

It is probably true that every clinic is performing more Caesarean sections today than ever. This is a natural result of the improvement in methods and technique, with the corresponding improvement in end results, i. e., mortality and morbidity. A glance at the appended table will show you that in this hospital, likewise, Caesareans are being chosen more often as the method of delivery. Since 1924, when thirteen out of 1,000 deliveries were done by the Caesarean

*Read before the May (1928) meeting of the Sinai Hospital Medical Society.

route, the incidence has increased until this year, for the first four months, 3.8 out of every 100 cases were delivered through an abdominal incision. For the entire period ($5\frac{1}{3}$ years) the incidence of Caesarean sections in this hospital has been 2.3 per cent, or twenty-three in every 1,000 deliveries. It is interesting to compare these figures with other clinics. I chose, for purposes of comparison, two local private hospitals comparable to ours, and several of the larger teaching clinics of the country. You will see that at the Woman's Hospital and Mercy Hospital, more than twice as many Caesareans are being done per 1,000 deliveries. You will note that Sinai's figures more closely approximate those of the large teaching clinics. It is not hard to understand why there should be such a greater incidence in the private hospital, when one remembers the pressure brought on the attending obstetricians by the family of a private patient who is apparently having a difficult labor. In view of this fact, it is to the credit of the obstetricians on this staff that our figures are low, demonstrating that Caesareans are not done as the easiest way out of an apparent difficulty.

TYPES OF OPERATION

The type of operation plays a very unimportant role in this survey. However, one cannot help being struck with the fact that of the eighty Caesareans, seventy-seven were of either the conservative classical variety, one of the radical or Porro Caesarean type, the remaining two being of the low cervical type; of the latter, the first was done just one year ago, the other a few weeks ago. Our series must therefore be considered a series of the classical type of operation. In addition to the eighty abdominal Caesareans performed, four vaginal Caesareans were done in the three years 1923-1925—none since 1925. This, I believe, demonstrates the preference for abdominal delivery over a difficult operative vaginal delivery.

When comparing this series with those of other clinics, with regard to types of operation, and again when comparing the Baltimore clinics with others, one is immediately impressed with the conservatism displayed by Baltimore obstetricians in accepting the newer but thoroughly tried advances in their art. While the last report of the Chicago Lying-in Hospital for the two years 1925-1927

gives 211 low cervical Caesareans to six classical, the Woman's Clinic of the Johns Hopkins Hospital reports thirty-six low cervical, with 184 classical sections, in the past seven years. Our maternity along with other Baltimore hospitals is ostensibly far behind in the use of this new and safer method of abdominal delivery.

INDICATIONS

In a study of this kind, one is most interested to know the indication which prompted the obstetrician to select abdominal delivery in preference to the usual route. In a private hospital where there is a high incidence of Caesarean section, as illustrated before, it is doubtful whether real indications existed in all cases. No statistics are available from the two Baltimore institutions mentioned before, but comparisons can be made with the larger clinics. In the teaching lying-in hospitals, one is bound to find a high percentage of contracted pelves due to the large number of colored women and white women of the lower strata of society, who have contracted pelves as a result of poor heredity, rickets or other stigmata of improper development. At Johns Hopkins Hospital in 77 per cent. of Caesarean sections performed there was a pelvic indication. At the Chicago Lying-In Hospital forty per cent. of the 227 Caesareans were performed for contracted pelves, a small percentage for a large clinic. Of the eighty Caesareans performed at the Sinai Hospital, thirty-nine, or about 50 per cent., may be considered to have had a pelvic indication. In twelve of the eighty operations there had been previous Caesareans, of which number seven may be considered to have been the real indication for operative intervention. The other indications are the usual ones, and I will not take time to read them. In two instances, Caesareans were performed for rupture of the uterus—once where the uterus ruptured through a previous Caesarean scar, and the other where the uterus ruptured following attempt to deliver by forceps. It is debatable whether these cases should be included in our series, because the indication here is an acute surgical condition, but following the practice of other clinics, I am retaining them as two of our eighty cases. In eight instances, due to incomplete records or other reasons, no real indication for Caesarean section could be discovered,

representing ten per cent. of the series. This percentage would be found to be small, I am sure, if comparison could be made with hospitals of similar scope.

STERILIZATION

While sterilization has not been considered an indication for Caesarean, it frequently becomes the real motive that actuates the accoucheur. Of the eighty women operated on, sixteen, or twenty per cent., were sterilized following delivery of the child. Of these there were eight strictly medical conditions, such as mitral stenosis, tuberculosis, chronic nephritis, diabetes, etc. The remaining eight were sterilized for pelvic contractions or uterine disease, previous Caesareans, myomata, or bicornate uterus.

PARITY

Of the eighty women, forty-four were primipara, nineteen para II, four para III, three para IV, two para V, two para VI, and one para IX. In the last named instance, the patient had had numerous miscarriages due to disease of the cervix, and when finally she succeeded in carrying a child to full term, she was delivered by Caesarean section.

MORTALITY

In the final analysis, a series of cases of Caesarean section is judged by its mortality and morbidity figures. Mortality figures are always subjected to corrections, and it is customary to submit a gross mortality percentage and a corrected mortality percentage. In our series, three women died, none since 1925. This gives a maternal mortality rate of 3.75 per cent. The conditions present were, in the first case, myocardial failure; in the second, eclampsia; in the third, ruptured uterus following previous attempts at forceps delivery. If one does not include the last case, for reasons mentioned before, the corrected mortality becomes 2.5 per cent. Comparison with the two private hospitals heretofore mentioned is impossible, because no figures are available from those institutions. We shall have to content ourselves with a comparison with the large clinics, and reference to the accompanying table indicates where we stand. The low mortality of the Chicago Lying-In can be attributed to the

improved technique of the low cervical operation. The high rate for Cook County and Long Island must be explained by the fact that they represent a class known as "dirty" cases, where attempts to deliver have been made by midwives or physicians on the outside before being sent into the hospital. The comparatively low mortality for our maternity is due undoubtedly to the fact that conditions approximate the ideal,—namely, careful pre-natal study, early admission to the hospital, and a minimum of examinations and attempts at delivery before operation. Considering that the operation in nearly all cases was the classical Caesarean, our figures speak well for the technique and treatment employed.

MORTALITY (FŒTAL)

Of the eighty-one babies born (there being a set of twins) there were six still births and one death two days following birth, giving a gross fœtal mortality of 8.7 per cent. Omitting two prematures and two dead before operation, due to ruptured uterus, the corrected mortality becomes 3.7 per cent., which compares rather favorably with the two institutions from which statistics are available. Although no figures are at hand for fœtal mortality in all deliveries in this hospital, I am sure that no great disparity would be found if comparison were to be made with Caesarean fœtal mortality, for whatever the type of delivery the usual fœtal mortality must be reckoned with. Reference to the mortality tables of the large clinics illustrates that fact. In Chicago the corrected figures are 2.1 per cent. for Caesarean and 1.8 per cent. for all deliveries. These statistics would tend to show that, provided a child is not a monstrosity or non-viable, it has more chance of surviving if delivered through the natural route than if delivered by Caesarean section, assuming of course, that other conditions are equal.

MORBIDITY

What proved the most interesting part of this survey was the study of morbidity and the character and length of the puerperium following these eighty Caesarean sections. The text books on the subject emphasize the dangers of performing Caesarean sections late in labor, and urge that intervention should be carried out before the

membranes rupture or the cervix becomes dilated. In fact, mortality figures are often given in such a way that series are divided into three types of cases—those operated upon before labor set in, those operated on early in labor, and those late in labor, with increase in death rate as the hours in labor increase. Not having enough deaths to form such a classification, I thought I could study this from the point of view of morbidity and length of puerperium. I therefore, divided my cases into three classes as mentioned above, which we will call A., B., and C. Of the cases operated on before labor set in, the average puerperium was 19.7 days; of those which were in labor from one to twelve hours, the average puerperium was nineteen days; of those in labor twelve to twenty-seven hours, the average puerperium lasted 21.5 days. These figures would make it appear that the safer time to operate is after the patient has been in labor for a few hours, and this is the opinion of many obstetricians who feel that the cervix should be sufficiently dilated to promote proper drainage. Of the three patients in the series that died, one belonged to Class A, the other dying from eclampsia cannot be classified, and the third must be put in a fourth class, in which attempts at delivery had previously been made.

By far the most common complication of the puerperium following Caesarean section in this hospital has been wound infection. Thirty per cent. of the cases operated on developed complications, and of these two-thirds were wound infections with or without other complications.

Two of the most striking cases in our series were as follows:

1. A twenty year old primipara with apparently normal measurements had been in labor forty hours or more, in hospital fifty-five hours, with membranes ruptured, and cervix three fingers dilated. An attempt was made to deliver her with high forceps, but this was unsuccessful. Caesarean section by the classical operation followed, resulting in a puerperium complicated by pelvic cellulitis and severe wound infection, with a stay in the hospital of 40 days.

2. A primipara, age twenty-one, had been in the hospital two hours, in labor. Vaginal examination had been made, membranes were apparently intact, cervix dilated one finger. A vaginal douche was given and a half hour later the patient taken to the operating room for Caesarean section. The result was a severe wound infection requiring a stay of 32 days in the hospital.

Wound infection was found to occur not only in those cases long in labor, or where there had been previous interference, but also, though less frequently, in those cases not long in labor and even those not in labor. For example, a rather severe breaking down of the external wound occurred in a woman who was not in labor and who had been in the hospital at least a week before operation. Another was in labor not twelve hours, with membranes intact, and no vaginal examinations, and yet she developed an abscess under the parietal peritoneum, which required a secondary operation for drainage. When we study the series, case after case, we come across instances in which the labor has been long and exhausting, but with a puerperium of normal duration, without complications. For example, a woman in labor twenty-eight hours, where several vaginal examinations had been made, with history of previous Caesarean complicated by puerperal sepsis, had a perfectly normal puerperium lasting fifteen days. Another instance was a patient in labor $2\frac{1}{2}$ days, with membranes ruptured, and a vaginal examination had been done, and yet the puerperium lasted only sixteen days. Many similar examples could be cited. Certainly with such varying results as these, it is difficult to draw conclusions as to the relationship between the time of operation and the complications of the puerperium. The average figures mentioned before, however, being figures, cannot lie, and so we must conclude, from our experience at least, that the safest time to operate is after the patient has been in labor a few hours, and where no previous attempt at delivery has been made. But it should be remembered at all times that a large percentage of all patients have a complicated puerperium, and that chances for wound infection are great.

SUBSEQUENT PREGNANCIES

If it were possible to follow up all the patients of this series and learn the character of subsequent labors, this study would be made doubly instructive. We should like to know how many required a repeated Caesarean, how many had spontaneous deliveries, how many other types of operative deliveries, and if any of the uteri ruptured. Inasmuch as this series comprises recent cases, it is of course, impossible to make such an investigation at this time. We have in

our files, records of only five cases out of the eighty, from which we could learn what happened in subsequent labors. Of these, one had a repeated Caesarean, two years and eight months later; one had a therapeutic abortion and sterilization for diabetes and nephritis; one was delivered by version and extraction two years later, and two by low forceps after an interval of two years and two years and five months. Of four that had subsequent labors, only one required a repeated Caesarean, and in this one the operation was done as an elective procedure, the accoucheur probably being unwilling to take the risk of rupture of the old scar. The remaining three delivered per vaginam. If this small group could be held up as a criterion, the old dictum "once a Caesarean, always a Caesarean" becomes an obsolete precept in the realm of obstetrics. However, as long as rupture of the uterus occurs in Caesarean scars, that principle will remain in the creed of obstetricians, almost as a commandment in the Holy Writ. Not until technique and skill become so refined as to forever obviate this tragic accident, will we be able to consign it to its proper place on the shelf of ancient medical lore.

SUMMARY

1. Eighty Caesarean sections were performed in the Sinai Hospital from January 1, 1923 to April 30, 1928, an incidence of twenty-three per 1,000 deliveries.
2. The incidence of Caesarean section is increasing from year to year, but the figures for this hospital more closely resemble the large teaching clinics than do those of other private hospitals.
3. Of the eighty Caesareans, seventy-seven were of the classical type, two low cervical, one radical. Sinai Hospital, along with other Baltimore hospitals, is far behind in employing the newer methods of Caesarean section.
4. Fifty per cent. of the Caesareans had a pelvic indication. There were twelve previous Caesareans. Sixteen women were sterilized.
5. The gross maternal mortality was 3.75 per cent., a figure which compares very favorably with the large teaching clinics of the country.

As to the fetal mortality, the gross was 8.7 per cent, corrected 3.7 per cent., figures which probably are a trifle high when compared with others.

6. Thirty per cent. of the cases showed some morbidity, that is, had some complication of the puerperium. Of these two-thirds were wound infections. The best results were obtained in those cases, where the patient had been in labor several hours. The worst results were seen where attempts had been made to deliver.

So called "clean cases" are often complicated by wound infections.

7. Four patients had subsequent labors, of whom only one had a repeated Caesarean. The old dictum, Once a Caesarean, always a Caesarean, no longer holds true.*

TABLE NO. 1
RATE OF INCIDENCE OF CÆSAREAN SECTION AT
SINAI HOSPITAL

	1923	1924	1925	1926	1927	1928 (4 mos.)	Total
Deliveries	580	616	691	643	699	206	3435
Caesareans	13	8	14	18	19	8	80
Percentage	2.2	1.3	2.0	2.8	2.7	3.8	2.3

No Deaths since 1925

No. 2. COMPARATIVE TABLE

		Mercy 1927	Women's 1923- 28	Sinai 1923- 28	Chicago Lying-in 1926- 27	Johns Hopkins 1895- 1928 (app.)	Long Island	Cook County 1914- 25
Number Deliveries		425	2904	3435	6031	32000		15000
Incidence C.S.....	6.6%		5.1%	2.3%	3.8%	1.43%	0.8%	1.1%
Maternal Mortality				3.75	1.35	3.37	8.0	9.4
Corrected				2.5				
Fœtal Mortality...				8.7	4.7		5.5	
Corrected				3.7	2.1			
Total Fœtal Mor- tality for all Deliveries					3.3			
Corrected					1.8			

2340 Eutaw Place.

*Since this paper was written, the author has delivered by forceps one of the most recent of the 80 patients in this series, thus illustrating again the last point in the summary.

BULLETIN

OF THE

SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

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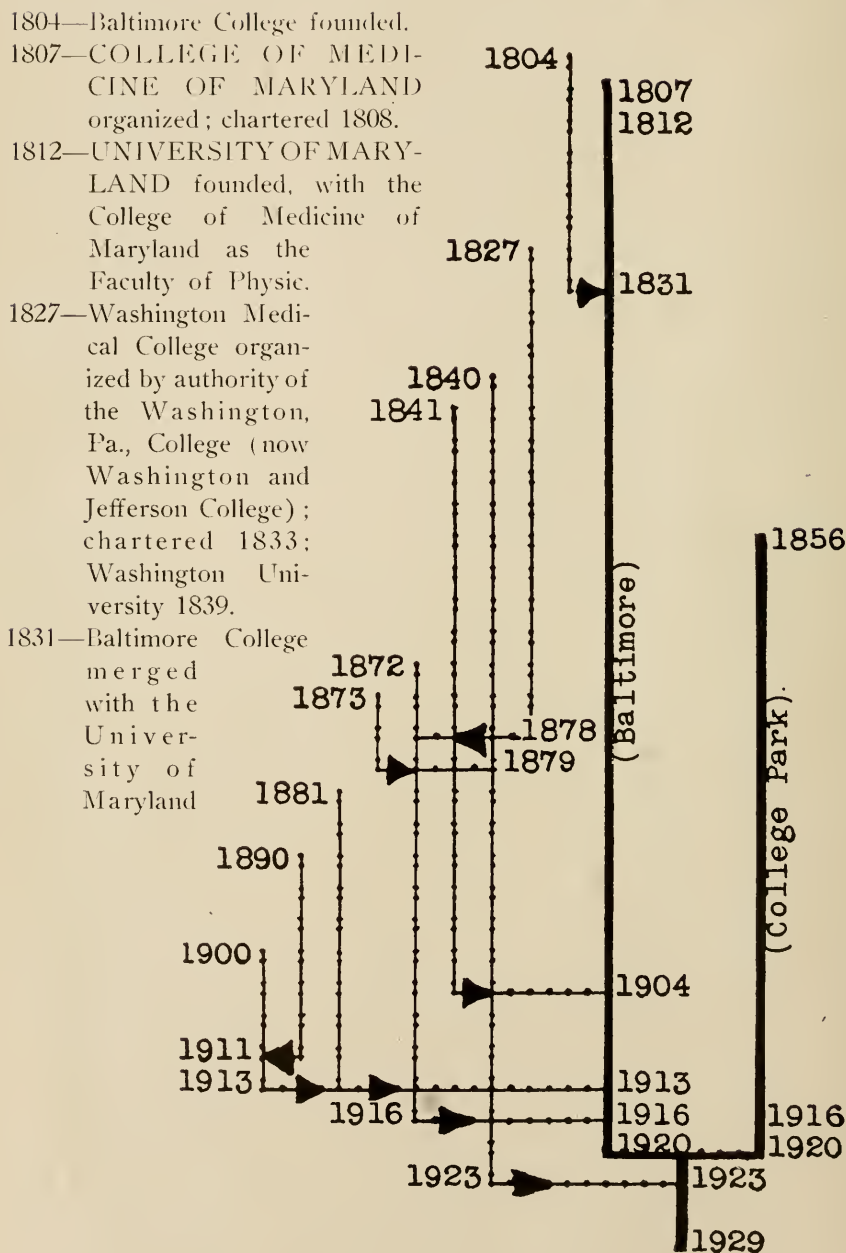
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A CHRONOLOGICAL STUDY OF THE EVOLUTION OF THE UNIVERSITY OF MARYLAND

Those interested in the evolutionary history of the University of Maryland are indebted to W. M. Hillegeist for the data herewith presented. So far as we know, this is the first occasion that such a study has been made. Its value needs no comment on our part. From Mr. Hillegeist's researches, it would appear that the institution could with propriety trace its birth back to the year 1804, when the Baltimore College was founded, instead as heretofore to 1807, with the creation of the College of Medicine of Maryland. The importance of his work, as we see it, however, does not rest so much upon this point, as upon the excellent method he has adopted in presenting graphically the date of organization of the component institutions now forming an integral part of the University of Maryland and how and when they became amalgamated. His was no light task. Many authorities had to be consulted and the information thus obtained had to be chronologically arranged, correlated, collated and tabulated. Though the material was not gotten together for the purpose of general circulation, the Editors of the BULLETIN have thought the information of sufficient importance to warrant all possible publicity.

HISTORICAL OUTLINE OF THE UNIVERSITY OF MARYLAND



as the Faculty of Arts and Sciences.

1840—Baltimore College of Dental Surgery incorporated.

1841—Maryland College of Pharmacy incorporated.

1856—MARYLAND AGRICULTURAL COLLEGE established.

1872—College of Physicians and Surgeons incorporated.

1873—Maryland Dental College incorporated.

1878—Washington University merged with the College of Physicians and Surgeons.

1879—Maryland Dental College merged with the Baltimore College of Dental Surgery.

1881—Baltimore Medical College incorporated.

1890—Baltimore University, School of Law organized.

1900—Baltimore Law School incorporated.

1904—Maryland College of Pharmacy merged with the University of Maryland as the Maryland College of Pharmacy, Department of Pharmacy, University of Maryland.

1911—Baltimore University, School of Law, merged with the Baltimore Law School.

1913—Baltimore Medical College, the Baltimore Medical College, Dental Department (1895), and the Baltimore Law School (1900; affiliated in 1903 with the Baltimore Medical College), merged with the respective departments of the University of Maryland.

1916—MARYLAND STATE COLLEGE OF AGRICULTURE incorporated.

1916—College of Physicians and Surgeons merged with the University of Maryland, School of Medicine. The name of the medical school now is the University of Maryland, School of Medicine, and College of Physicians and Surgeons.

1920—UNIVERSITY OF MARYLAND merged and consolidated with the MARYLAND STATE COLLEGE OF AGRICULTURE as the UNIVERSITY OF MARYLAND.

1923—Baltimore College of Dental Surgery merged with the University of Maryland, School of Dentistry, as the Baltimore College of Dental Surgery, Dental School, University of Maryland.

(1907 to 1920—The St. John's College, Annapolis, was, by affiliation, the Department of Arts and Sciences of the University of Maryland.)

W. M. HILLEGEIST,
Registrar, University of Maryland, June 22, 1929.

AGAIN A CALL FOR PAPERS FROM OUR ALUMNI

In a recent issue the Editors called attention to the valuable role of the BULLETIN as a medium for publication of papers of our Alumni. The reasons then advanced, many of them self-evident, need not be repeated. The Editors are gratified at the response to their invitation to our Alumni, but they feel that there must be many more excellent papers available each year from such a large number of both tried and budding authors as our association includes. They repeat that, while of course no journal can undertake to publish every paper submitted, every manuscript will be given a sympathetic consideration by the entire Board of Editors, and that no really suitable and worthy paper will be rejected. So send them in.

THE RECENT ALUMNI REUNION

With the exception of the commencement itself, practically all the activities of the recent Alumni reunion were under the auspices of the Alumni Association, which is as it should be. And yet things were not always so. There was a time when the medical school itself, like other institutions of its kind, had to supply the vis a tergo for all such occasions, the Alumni Association contenting itself with a rather perfunctory annual meeting and perhaps an annual banquet. All of which goes to illustrate once more the growing activity and influence of the Alumni Association as now constituted.

The Alumni Association can look back with much satisfaction to the reunion just held. A large number of old graduates of the three original schools came back to the old homestead, and, unless appearances and utterances are both deceiving, they derived genuine enjoyment from their visit, besides conferring a more than corresponding pleasure upon the faculty and the Baltimore City alumni. As usual, a number of class reunions were held. Perhaps the largest was that of the class of 1904, in which all three of the original schools were represented, and well represented, too. Twenty-five years had made some little change in the physical appearance of these old "grads," but apparently not much in the spirit of youthfulness which they carried off with their diplomas a quarter of a century ago. All took part in the general gatherings on the

first day of the reunion, but the second day was reserved for their own more intimate gatherings. It is probably true, and of course perfectly natural, that the latter was the most enjoyable feature of the whole occasion, giving opportunities for a polishing up of old memories and a renewal of old acquaintance. At all three of these separate class gatherings members of the old faculties were honored guests.

The annual dinner was voted a big success, not only from a gastronomic standpoint, but because of the excellence and fewness of the speeches, giving the affair a snap and sparkle which, to say the least, is not traditional. Much credit, too, is due those who arranged the clinics, all of which were instructive and therefore well attended. A list of the out-of-town graduates who attended is published elsewhere in this issue. Those who, with no small labor, arranged for the entertainment of these guests will, no doubt, feel more than repaid if the visitors felt rewarded for their trip to Baltimore, and if they become advance agents for bigger and better reunions to come with the succeeding years.

BOOK REVIEW

THE EYE. By C. W. RUTHERFORD, M.D. New York: D. Appleton and Co.

This is a book of some 400 pages, the peculiar style of which arrests attention. Brief, pithy sentences undoubtedly lend emphasis and express authority, but make the reading tedious and detract considerably from its general worth. The illustrations on operative procedures are ample. The diagrams of visual and pupillary pathways, together with the description of the methods of recording visual fields and the significance of encroachments thereon, leave little to be desired. There is, however, a paucity of pictorial representations of external diseases, as well as those of fundal conditions.

While the context is in the main satisfactory, the author could well devote less space to rare lesions and more to common conditions. This book should appeal especially to those physicians and students looking for an ophthalmology intermediate in position between the primer and the standard reference works. As such it has a distinct field of usefulness.

M. R. K.

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ELECTION OF OFFICERS

The names listed above are our officers for the term beginning June 1st, 1929, and ending June, 1930.

PREAMBLE TO OUR CONSTITUTION AND BY-LAWS

We, Alumni of the School of Medicine of the University of Maryland, Incorporated, comprising the graduates of the University of Maryland School of Medicine, the Baltimore Medical College and the College of Physicians and Surgeons of Baltimore City, desirous of perpetuating those associations which began during our professional student life and of keeping our interest in our Alma Mater, and advancing in every legitimate way her welfare, do hereby form an association for the above purposes and do enact the Constitution and By-Laws for the government of same.

ANNUAL REPORT OF THE SECRETARY

The progress of the Alumni Association during the past year is, I am sure, a source of profound gratification to all of us. The achievements of the organization have reached the high water mark, which should mean to us that the work of the Association will assume larger proportions with each succeeding year.

The interest manifested by our officers this year is no less gratifying. Our meetings were well attended and the enthusiasm always displayed that the occasion deserved. It is true that they were not all present at every meeting, but men of our profession have never been known to turn out 100% for any group of meetings out of a twelve-month period. In view of this fact the following record of attendance will, I think, prove to you that the officers of your Association have not been idle. Prior to the incorporation there were two Executive Committee Meetings with an attendance of seventy per cent. and three Special Meetings with attendance of eighty per cent. In addition, there was one General Meeting with attendance of eighty per cent. Since incorporation there have been two Special, two Board of Directors, and two Advisory Meetings with a record of attendance of eighty-five per cent. There was, during the year, a Library Committee appointed that will function during the coming term.

The Association has continued its cooperative work throughout the past year with the Board of Editors of the BULLETIN and through it is endeavoring to keep in communication with the active, inactive, and prospective members of the Association. In this endeavor, we honestly solicit your aid in bringing us in touch with those whose addresses are incomplete in our files, and if any of the readers of this BULLETIN are on the inactive list, we sincerely hope that you will line up with us in helping to carry on the work of the Association.

There are now living between six and seven thousand people who have received degrees from one of the three Medical Schools or the combined Medical School. The value of keeping a list of such graduates and communicating with them from time to time is beyond estimate. We feel that our school is only as strong as our Alumni Association; therefore, we know that this work is of vital impor-

tance to the future of our University. It has been our aim, and still is, to perfect this organization so that we can be of help to each alumnus, and all of us, through the organization, be of help to our school. To secure an authentic list of our graduates has been a hard and tedious task. The work has been going steadily along, however, and we feel that we can safely say as much has been accomplished in this direction as possibly could have been under the existing circumstances. We truly hope, with the help of all concerned, more will be accomplished toward this end during the coming year than any preceding. We have added one hundred and four active members to our list during the past year and the average loss each year amounts to about two hundred.

Our headquarters has continued its activity in promoting interest in the schools amongst the graduates. Bear in mind we are always willing to cooperate with you when we can be of service. Names of graduates in your respective community will be gladly sent to you upon request, and aid in organizing will be given if a local organization does not already exist. The following meetings were arranged during the past year for the purpose of enhancing interest:

There was a meeting held at the Battery Park Hotel, Asheville, N. C., November 13, 1928, during the Annual Meeting of the Southern Medical Association. Dr. Paul Weist had charge of the meetings and reported seventy-three members present. From the home organization, Dr. Charles Reid Edwards, our President, was present and was one of the speakers.

On June 5, 1929, the University of Maryland Medical Alumni Association of New York State (exclusive of New York City) held its Annual Meeting and reunion at the Hotel Utica, Utica, New York. Dr. Charles Reid Edwards was also one of the speakers at this dinner. Dr. Milton E. Gregg, of Mottville, N. Y., Secretary of the Association, reports that the Annual affair was extraordinarily successful.

The work inside the school in securing the good will of the students has not been neglected. We feel that the interest we have given them in the past has produced gratifying results. Certainly their readiness to come to us for aid, counsel, advice, etc., is an indication to us that we are functioning as an organization in helping

them with their problems. We sincerely trust that they are leaving the University each graduating year with a feeling of greater loyalty to their Alma Mater. We are now in a position to serve them better the coming year than we have previously been.

The Rotating Fund has served many during the past year. Unfortunately, however, this does not reach as many as need it, but with the aid of the Bookstore and the Alumni members, the sum of \$600 was raised and distributed to those most needing aid. It is our hope that this is the beginning of a fund that will at some future date enable us to do as much for the needy student as many of the heavily endowed institutions are now doing.

The Bookstore has had a successful year. As stated in the BULLETIN of last July, the store pays full dues to our treasury the first year out, two dollars the second, and one dollar the third. Then the dues are taken care of by the alumnus himself; furthermore, it pays \$250.00 to the Students' Council for its running expenses, and the past year it contributed \$500.00 to the Rotating Fund.

Two years ago the Bookstore started with no capital and did a gross business of \$12,735 the first year. The profits from this business amounted to \$1,800.00. The past year there was a slight increase in both gross business and profits. The profits, as you can see, are turned over to the various activities.

The Alumni House is now being finished in detail. Throughout the Spring term, we have been trying to carry on the dining-room and cafeteria service, and at the same time remodel the old structure. In spite of this drawback, we have managed to get by without a loss. We are now prepared to take care of about forty students in our upstairs rooms. The bookstore is now functioning on the first floor front of the building, instead of occupying the space it formerly did in the Medical School. The dining-room, located first floor back, and the cafeteria in the basement are now running smoothly. We are expecting to be prepared to take care of club meetings, fraternity smokers, banquets, and other activities at the beginning of the next school year. In fact, it is our endeavor to supply a need in the school that has heretofore gone lacking. The need for such a building was well demonstrated during our Spring activities. It served as a rendezvous for the Alumni who returned

and enabled us to arrange a get-together and help them in other ways. This proves to us that the project was a wise one and that it is here to stay. We also realize that the needs will multiply each year; therefore, we must not be content with present achievements but complete our plans for the future. In order for us to do this, we need your continued support to help carry out our plans as outlined in the last issue of the BULLETIN.

There are present in our activities five class reunions as outlined in the April BULLETIN. We, as officers of the Association, wish to express our appreciation to the committees and members of the various classes for their hearty cooperation. It is indeed gratifying to us to see this interest displayed.

We also wish to express our appreciation to the faculty members for their cooperation. They have enthusiastically helped us in our activities throughout the year.

To fail to mention the splendid work of our personnel under the direction of our Executive Secretary, Mrs. Grace B. Cable, and Mrs. Jno. W. Reed, manager of the dining-room, would be most ungrateful.

SPRING ACTIVITIES IN BALTIMORE

The second three day celebration in conjunction with the meeting of the Alumni Association held in Baltimore, June 6, 7 and 8, was well in keeping with the achievements of the year. The graduates, who returned in large numbers from all parts of the country, seemed so enthusiastically interested that we, as officers of the Association, felt amply paid for the year's work.

The activities began on the morning of June 6th by registering at the Alumni House. These Alumni registered from as far north as Maine, as far west as California, and as far south as Florida. During the morning non-technical addresses were given by Dr. Randolph Winslow, Emeritus Professor of Surgery; Hiram Woods, Emeritus Professor of Diseases of Eye and Ear; Joseph M. Craig-hill, former Professor of Clinical Medicine; Dr. M. C. Pincoffs, present Professor of Medicine, and Dr. J. M. H. Rowland, present Dean of the School of Medicine.

Following this a splendid Buffet Luncheon was served to two hundred Alumni members in the dining-room of the Alumni House. This luncheon was arranged by the Alumni Association and many more could have been served had they availed themselves of the opportunity.

In the afternoon, Dr. William Wayne Babcock, P. & S. (1893), Professor of Surgery, Temple University, gave a most interesting clinic on spinal anesthesia. This was followed by a clinic given by Dr. Porter P. Vinson, U. of M. (1914), who is now head of the Department of Oral Endoscopy at the Mayo Clinic. Hundreds of both in and out of town Alumni listened with interest to the splendid discourses given by these eminent specialists. We more than appreciate the efforts of these loyal Alumni members for leaving their work to help complete our program. On the evening of the same day the Alumni Banquet was held at the Alcazar, Cathedral and Madison Sts. The attendance at this affair was the best in our history. One would judge from appearances during courses and speeches and comments following that everyone had a most delightful time.

The outing given at the Rolling Road Country Club on June 7 was also considered a great success by the lovers of tennis, golf, card playing, etc. Certainly those who cared for none of these have to admit that the day could not have been more delightful.

The various class reunions were extraordinarily successful. The members of the class reunions for the next Spring Activities have a difficult task to successfully duplicate those of this year and an almost impossible one to improve.

Mrs. C. R. Edwards, wife of our President, delightfully entertained the ladies in the parties of our visiting graduates. She served a Buffet supper at her home on June 6, and during the afternoon of the same day, automobile rides were taken to Green Spring Valley and other points of interest in and around the city. The following day they motored to Annapolis.

REGISTRATION

Dr. R. Winslow, 1900 Mt. Royal Terrace, Baltimore, Md....U. of Md. 1873
 Dr. Samuel C. Trippe, Royal Oak, Md.....U. of Md. 1875
 Dr. Wilmer Brinton, Calvert & Preston Sts., Baltimore, Md..U. of Md. 1876

Dr. Howard Osburn, Rippon, W. Va.....	U. of Md.	1877
Dr. S. K. Pfaltzgraff, York, Pa.....	U. of Md.	1886
Dr. W. P. E. Wyse, Pikesville, Md.....	U. of Md.	1886
Dr. Arthur B. Glascock, 2213 Eutaw Place, Baltimore, Md..	U. of Md.	1888
Dr. H. B. McDonnell, College Park, Md.....	P. & S.	1888
Dr. C. Hampson Jones, 2529 St. Paul St., Baltimore, Md.....	P. & S.	1889
Dr. William S. Gardner, 1025 N. Calvert St., Baltimore, Md....	P. & S.	1889
Dr. Wm. S. Love, 836 W. North Ave., Baltimore, Md.....	U. of Md.	1890
Dr. J. H. Mitnick, 424 N. Greene St., Baltimore, Md.....	U. of Md.	1890
Dr. Julius Friedenwald, 1013 N. Charles St., Baltimore, Md....	P. & S.	1890
Dr. Joseph E. Giehner, 3201 Garrison Ave., Baltimore, Md..	U. of Md.	1890
Dr. Geo. L. Broadrup, 920 23rd St., N. W., Washington, D. C...	P. & S.	1891
Dr. W. C. Bowen, Belton, S. C.....	U. of Md.	1892
Dr. John I. Dickerson, Stockton, Md.....	B. M. C.	1892
Dr. J. M. H. Rowland, 1118 St. Paul St., Baltimore, Md.....	B. M. C.	1892
Dr. Wm. Wayne Babcock, 1720 Spruce St., Philadelphia, Pa....	P. & S.	1893
Dr. G. E. Snyder, 3352 Chope Place, Detroit, Mich.....	B. M. C.	1893
Dr. Herbert H. Frazier, Jackson, Mich.....	B. M. C.	1893
Dr. G. Milton Linthicum, 817 Park Ave., Baltimore, Md.....	P. & S.	1893
Dr. Morris A. Birely, Thurmont, Md.....	U. of Md.	1894
Dr. Edw. Magruder, American Bldg., Baltimore, Md.....	B. M. C.	1895
Dr. F. J. Kirby, St. Joseph's Hospital, Baltimore, Md.....	U. of Md.	1895
Dr. J. W. Holland, 602 Edgevale Road, Baltimore, Md....	U. of Md.	1896
Dr. Harvey G. Beck, 215 Northway, Baltimore, Md.....	P. & S.	1896
Dr. Frank W. Keating, Owings Mills, Md.....	U. of Md.	1896
Dr. Jno. R. Abercrombie, 3524 Greenm't Ave., Balto., Md..	U. of Md.	1895
Dr. Chas. R. Foutz, Westminster, Md.....	U. of Md.	1897
Dr. Jno. B. Ray, Leaksville, N. C.....	B. M. C.	1898
Dr. Jno. A. Tompkins, Md. Gen'l. Hosp., Baltimore, Md....	U. of Md.	1898
Dr. Page Edmunds, 12 Elmwood Road, Baltimore, Md....	U. of Md.	1898
Dr. Geo. H. Steuart, Ottoman, Va.....	U. of Md.	1899
Dr. Howard Kahn, 2513 Liberty Heights, Baltimore, Md....	U. of Md.	1900
Dr. W. H. Smith, Medical Arts Bldg., Baltimore, Md.....	U. of Md.	1900
Dr. Irving J. Spear, 924 N. Charles St., Baltimore, Md.....	U. of Md.	1900
Dr. Samuel Demarco, 1604 Linden Ave., Baltimore, Md.....	U. of Md.	1900
Dr. Nathan Winslow, 1900 Mt. Royal Ter., Baltimore, Md..	U. of Md.	1901
Dr. Frank S. Marr, 19 S. Point St., Chillicothe, O.....	P. & S.	1901
Dr. C. A. Clapp, 513 N. Charles St., Baltimore, Md.....	B. M. C.	1902
Dr. C. L. Davis, 3806 Copley Road, Baltimore, Md.....	G. Wash. Univ.	1902
Dr. H. E. Ashbury, Medical Arts Bldg., Baltimore, Md....	U. of Md.	1903
Dr. Carroll Lockard, 2925 N. Charles St., Baltimore, Md....	U. of Md.	1903
Dr. Edgar Friedenwald, 1616 Linden Ave., Baltimore, Md....	P. & S.	1903
Dr. G. F. Reis, 24 S. Broadway, Baltimore, Md.....	P. & S.	1903
Dr. Jno. Evans, Medical Arts Building, Baltimore, Md.....	B. M. C.	1903
Dr. J. W. Gerber, 770 Washington Ave., Bridgeport, Conn.	U. of Md.	1904

Dr. Ejnar Hansen, 184 E. 75th St., New York City.....	U. of Md. 1904
Dr. H. V. Dutrow, 1040 Fidelity Med. Bldg., Dayton, O....	U. of Md. 1904
Dr. A. B. Eagle, Martinsburg, W. Va.....	U. of Md. 1904
Dr. C. A. Willis, U. S. Vet. Bureau, Charleston, W. Va....	U. of Md. 1904
Dr. R. R. Norris, Crisfield, Md.....	U. of Md. 1904
Dr. J. E. Wilson, Clarksburg, W. Va.....	P. & S. 1904
Dr. Chas. Bagley, Jr., Latrobe Apts., Baltimore, Md.....	U. of Md. 1904
Dr. Henry Waldschmidt, 933 W. Hanover St., Balto., Md...	U. of Md. 1904
Dr. A. B. Lennan, 3133 Guilford Ave., Baltimore, Md.....	U. of Md. 1904
Dr. M. J. Sullivan, Haverstraw, N. Y.....	B. M. C. 1904
Dr. H. G. Stevens, New Milford, Conn.....	B. M. C. 1904
Dr. W. A. Nelson, Williamstown, Mass.....	B. M. C. 1904
Dr. John Purvis, Annapolis, Md.....	U. of Md. 1904
Dr. Meyer A. Weinberg, 1724 Eutaw Place, Baltimore, Md..	U. of Md. 1904
Dr. Joseph Payne, Midland Park, N. J.....	B. M. C. 1904
Dr. A. W. Valentine, 610 N. C. Ave., S. E., Wash., D. C....	U. of Md. 1904
Dr. L. Ely, 128 W. High St., Somerville, N. J.....	P. & S. 1904
Dr. Leonard C. Richardson, 112 W. 25th St., Baltimore, Md..	B. M. C. 1904
Dr. E. M. Dailey, Dushore, Pa.....	P. & S. 1904
Dr. Emil Novak, 26 E. Preston St., Baltimore, Md.....	B. M. C. 1904
Dr. H. K. Fleck, 513 Cathedral St., Baltimore, Md.....	P. & S. 1904
Dr. Herbert E. Zepp, 3048 W. North Ave., Baltimore, Md...	U. of Md. 1904
Dr. A. E. Dann, Canton, Pa.....	U. of Md. 1904
Dr. C. L. Owens, Cumberland, Md.....	U. of Md. 1904
Dr. John J. Donovan, 1402 Linden Ave., Baltimore, Md.....	B. M. C. 1904
Dr. W. E. Byers, 616 Woodington Ave., Baltimore, Md.....	B. M. C. 1904
Dr. J. W. McGehee, Reidsville, N. C.....	U. of Md. 1904
Dr. E. B. Powers, Strasburg, Va.....	Va. Med Coll. 1904
Dr. Frank C. Wilson, 122 W. Lafayette Ave., Baltimore, Md...	B. M. C. 1904
Dr. Horace G. Ripley, 75 Linden St., Brattleboro, Vt.....	P. & S. 1904
Dr. C. E. Imbrie, Butler, Pa.....	B. M. C. 1904
Dr. H. E. Hasseltine, Washington, D. C.....	B. M. C. 1904
Dr. Vernon F. Kelly, 608 Somerset Rd., Baltimore, Md.....	U. of Md. 1904
Dr. O. D. McCoy, 41 15th St., Wheeling, W. Va.....	P. & S. 1904
Dr. B. O. Robinson, 809 Market St., Parkersburg, W. Va....	P. & S. 1904
Dr. W. S. Webb, 1705 Warwood Ave., Wheeling, W. Va.....	P. & S. 1904
Dr. H. T. Robinson, Cumberland, Md.....	U. of Md. 1904
Dr. C. L. Owens, Cumberland, Md.....	U. of Md. 1904
Dr. J. L. Rubenstein, 1900 Grand Concourse, New York....	U. of Md. 1904
Dr. Andrew C. Gillis, 1033 N. Calvert St., Baltimore, Md....	P. & S. 1904
Dr. Chas. Halliday, 2411 N. Charles St., Baltimore, Md.....	P. & S. 1904
Dr. M. D. Kefauver, Smithburg, Md.....	B. M. C. 1904
Dr. W. Henry Fisher, Catonsville, Md.....	U. of Md. 1905
Dr. Jesse W. Downey, 529 N. Charles St., Baltimore, Md....	U. of Md. 1905
Dr. Clarence D. Rollins, Jacksonville, Fla.....	B. M. C. 1905

Dr. Robt. L. Mitchell, 2112 Maryland Ave., Baltimore, Md....	U. of Md.	1905
Dr. Henry J. Walton, 214 W. Monument St., Baltimore, Md....	B. M. C.	1906
Dr. Frederick V. Beitler, Relay, Md.	B. M. C.	1906
Dr. W. M. Carmine, 88 Balto. Ave., Dundalk, Balto., Md....	U. of Md.	1907
Dr. Wm. H. Schultz, Univ. of Md., Baltimore, Md.....	Hopkins	1907
Dr. M. J. Hanna, 1822 Baltimore St., Baltimore, Md.....	U. of South	1908
Dr. Jno. Nelson Osburn, Los Angeles, Calif.....	U. of Md.	1909
Dr. R. S. Willse, Latrobe Apts., Baltimore, Md.....	U. of Md.	1909
Dr. Harry M. Robinson, 405 N. Charles St., Baltimore, Md....	B. M. C.	1909
Dr. Morris B. Green, 23 Hartford Rd., Baltimore, Md.....	U. of Md.	1909
Dr. M. I. Stem, 3302 Pinkney Rd., Baltimore, Md.....	U. of Md.	1909
Dr. T. H. Vinup, 37 Stricker St., Baltimore, Md.....	U. of Md.	1909
Dr. R. A. Shankwiler, 3912 Tunxpier Rd., Detroit, Mich....	U. of Md.	1909
Dr. C. F. Strosnider, Goldsboro, N. C.....	U. of Md.	1909
Dr. Jno. Robertson, Onancock, Va.....	U. of Md.	1909
Dr. C. A. Neafie, Pontiac, Mich.....	U. of Md.	1909
Dr. C. W. Maxson, 827 N. Charles St., Baltimore, Md.....	P. & S.	1910
Dr. Ralph P. Truitt, 1014 St. Paul St., Baltimore, Md.....	U. of Md.	1910
Dr. Hugh R. Spencer, University of Md., Baltimore Md.....	B. M. C.	1910
Dr. W. F. Zinn, Medical Arts Bldg., Baltimore, Md.....	P. & S.	1911
Dr. W. H. Triplett, 1324 W. Lombard St., Baltimore, Md....	B. M. C.	1911
Dr. A. C. Sorenson, York, Pa.....	P. & S.	1911
Dr. Jno. F. Hogan, 7 E Preston St., Baltimore, Md.....	P. & S.	1911
Dr. C. A. Waters, 1100 N. Charles St., Baltimore, Md.....	U. of Md.	1911
Dr. M. C. Pinecoffs, University Hospital, Baltimore, Md.....	Hopkins	1912
Dr. A. L. Goldstein, 330 N. Charles St., Baltimore, Md.....	P. & S.	1912
Dr. C. F. Coughlin, 3701 Roland Park, Baltimore, Md.....	P. & S.	1912
Dr. H. Boyd Wylie, University of Md., Baltimore, Md.....	B. M. C.	1912
Dr. C. Loring Joslin, Medical Arts Bldg., Baltimore, Md....	U. of Md.	1912
Dr. Harry Deibel, 1224 Hanover St., Baltimore, Md.....	P. & S.	1912
Dr. E. P. Smith, 2409 Roslyn Ave., Baltimore, Md.....	P. & S.	1912
Dr. J. Houston Toulson, Med. Arts Bldg., Baltimore, Md....	U. of Md.	1913
Dr. C. Reid Edwards, Med. Arts Bldg., Baltimore, Md....	U. of Md.	1913
Dr. W. F. Gemmill, York, Pa.....	U. of Md.	1913
Dr. A. L. Holstein, 1615 University Ave., N. Y. C.....	U. of Md.	1914
Dr. J. F. Lutz, 2101 Mt. Holly St., Baltimore, Md.....	U. of Md.	1914
Dr. M. M. Brotman, Newark, N. J.....	U. of Md.	1914
Dr. Benj. Pushkin, 1804 Eutaw Place, Baltimore, Md.....	U. of Md.	1914
Dr. J. W. Katzenberger, 1729 W. Lombard St., Balto., Md....	U. of Md.	1914
Dr. G. L. Dailey, 618 N. 2nd St., Harrisburg, Pa.....	B. M. C.	1914
Dr. G. L. Timanus, 1307 Maryland Ave., Baltimore, Md....	U. of Md.	1914
Dr. A. J. Gillis, 20 E. Preston St., Baltimore, Md.....	P. & S.	1914
Dr. John S. Fenby, 3522 Greenmount Ave., Baltimore, Md....	U. of Md.	1914
Dr. Walter L. Denny, 1800 N. Charles St., Baltimore, Md....	U. of Md.	1914
Dr. Harry M. Stein, 1315 Mt. Royal Ave., Baltimore, Md....	U. of Md.	1914

- Dr. Chas. C. Habliston, 104 W. Madison St., Baltimore, Md....U. of Md. 1914
- Dr. Porter P. Vinson, Mayo Clinic, Rochester, Minn.....U. of Md. 1914
- Dr. J. H. Metcalfe, Sudlersville, Md.....U. of Md. 1914
- Dr. A. D. McFadden, 1700 E. 32nd St., Baltimore, Md....U. of Md. 1914
- Dr. Austin Wood, Medical Arts Building, Baltimore, Md....U. of Md. 1914
- Dr. L. K. Fargo, 3613 Wabash Ave., Baltimore, Md.....P. & S. 1915
- Dr. Thos. K. Galvin, 225 W. Monument St., Baltimore, Md....P. & S. 1915
- Dr. Robt. W. Johnson, Medical Arts Bldg., Baltimore, Md...U. of Md. 1915
- Dr. W. R. Johnson, 1206 St. Paul St., Baltimore, Md.....U. of Md. 1915
- Dr. Wm. A. Bridges, Towson, Md.....U. of Md. 1915
- Dr. U. E. Stern, Newark, N. J.....U. of Md. 1915
- Dr. Saml. Snyder, 1634 E. Baltimore St., Baltimore, Md....U. of Va. 1916
- Dr. C. A. Reifschneider, Baltimore, Md.....U. of Md. 1916
- Dr. F. C. Marino, Cedargarden Rd., Baltimore, Md.....U. of Md. 1916
- Dr. J. J. Roberts, 1300 St. Paul St., Baltimore, Md.....U. of Md. 1916
- Dr. H. E. Gillett, Ramsey, N. J.....U. of Md. 1916
- Dr. E. C. Reitzel, 2227 N. Fulton Ave., Baltimore, Md.U. of Md. 1917
- Dr. Monte Edwards, University Hospital, Baltimore, Md.....London 1917
- Dr. H. Lawrence Wheeler, Baltimore, Md.....U. of Md. 1917
- Dr. C. E. Macke, 928 N. Charles St., Baltimore, Md.....U. of Md. 1918
- Dr. E. A. Cafritz, 1513 16th St., S. E., Wash., D. C.....U. of Md. 1918
- Dr. M. LeRoy Lumpkin, 914 N. Charles St., Baltimore, Md..U. of Md. 1919
- Dr. Wm. G. Geyer, 156 N. Milton Ave., Baltimore, Md...U. of Md. 1919
- Dr. Harold E. Wright, 1832 N. Caroline St., Baltimore, Md...U. of Md. 1919
- Dr. E. P. Adams, T. B. Hospital, Warren, Ohio.....U. of Md. 1919
- Dr. L. D. Phillips, Brandywine Sanatorium, Marshallton, Del.U. of Md. 1919
- Dr. H. B. McElwain, 31 E. North Ave., Baltimore, Md....U. of Md. 1919
- Dr. W. C. Deakyn, Smyrna, Del.....U. of Md. 1919
- Dr. C. J. Healsabeck, Walnut Cove, N. C.....U. of Md. 1919
- Dr. E. W. Stewart, 405 N. Charles St., Baltimore, Md.....U. of Md. 1919
- Dr. James Brown, 3210 Liberty Hts. Ave., Baltimore, Md..U. of Md. 1919
- Dr. D. P. Alagia, 3326 Frederick Ave., Baltimore, Md.....U. of Md. 1919
- Dr. W. H. Ingram, 2439 N. Charles St., Baltimore, Md.....U. of Md. 1919
- Dr. A. C. Tiemeyer, 817 Park Ave., Baltimore, Md.....U. of Md. 1919
- Dr. Fred B. Smith, 11 E. Chase St., Baltimore, Md.....U. of Md. 1920
- Dr. C. W. Stewart, 1738 E. 28th St., Baltimore, Md.....U. of Md. 1919
- Dr. Cyrus F. Horine, 817 Park Ave., Baltimore, Md.....U. of Md. 1919
- Dr. S. A. Macis, 2816 Baker St., Baltimore, Md.....U. of Md. 1919
- Dr. F. A. Holden, 3637 Kimble Road, Baltimore, Md.....U. of Md. 1920
- Dr. Howard M. Bubert, Tudor Hall Apts., Baltimore, Md...U. of Md. 1920
- Dr. J. Morris Reese, Lutherville, Md.....U. of Md. 1920
- Dr. D. J. Pessango, Medical Arts Bldg., Baltimore, Md....U. of Md. 1920
- Dr. J. Stanley Graybill, Mt. Airy, Md.....U. of Md. 1921
- Dr. Leon Freedom, 4103 Wentworth Road, Baltimore, Md..U. of Md. 1921
- Dr. Moses Paulson, Temple Garden, Baltimore, Md.....U. of Md. 1921

Dr. Frank A. Reynolds, Baltimore, Md.....	U. of Md. 1921
Dr. J. H. Wilkerson, The Walbert, Baltimore, Md.....	U. of Md. 1921
Dr. A. C. Monninger, 800 E. North Ave., Baltimore, Md....	U. of Md. 1922
Dr. Hubert M. Heitsch, Pontiac, Mich.....	U. of Md. 1922
Dr. H. R. Peters, 1908 W. Lexington St., Baltimore, Md....	U. of Md. 1922
Dr. Wm. S. Love, Jr., 837 W. North Ave., Baltimore, Md...	U. of Md. 1923
Dr. Geo. E. Shannon, 700 N. Fulton Ave., Baltimore, Md....	U. of Md. 1922
Dr. M. A. Novey, 2424 Eutaw Place, Baltimore, Md.....	J. H. U. 1923
Dr. M. H. Goodman, 2442 Eutaw Place, Baltimore, Md.....	J. H. U. 1924
Dr. Robt. B. Wright, University of Maryland, Baltimore, Md...	J. H. U. 1924
Dr. T. B. Aycock, Medical Arts Bldg., Baltimore, Md.....	U. of Md. 1924
Dr. James G. Howell, Catonsville, Md.....	U. of Md. 1925
Dr. Leo T. Brown, Wash. Medical Bldg., Washington, D. C...	U. of Md. 1925
Dr. Thomas J. Coonan, Baltimore, Md.....	U. of Md. 1925
Mr. Carl D. Clarke, University Hospital, Baltimore, Md.....	Yale 1926
Dr. W. C. Merkel, Hamburg, Pa.....	U. of Md. 1926
Dr. Paul Schenker, 2122 Calow Ave., Baltimore, Md.....	U. of Md. 1926
Dr. F. K. Morris, 3414 Gwynns Falls Pkwy., Baltimore, Md...	U. of Md. 1927
Dr. Charles E. Gill, University Hospital, Baltimore, Md....	U. of Md. 1927
Dr. E. L. Chambers, 3024 Eutaw Place, Baltimore, Md.....	U. of Md. 1927
Dr. S. A. Tumminello, 306 N. Greene St., Baltimore, Md....	U. of Md. 1927
Dr. A. C. Smoot, Fullerton, Md.....	U. of Md. 1928
Dr. Herman Chor, Baltimore, Md.....	U. of Md. 1928
Dr. Myer D. Farlman, 42 Avenue C, New York City.....	U. of Md. 1929
Dr. Milton L. Solomon, 139 Kings Co. Hos., Brooklyn, N. Y...	U. of Md. 1929
Dr. W. R. Fargo, Baltimore, Md.....	U. of Md. 1929
Dr. Benj. Prager, 14½ Vernon Ave., Brooklyn, N. Y.....	U. of Md. 1929
Dr. J. Matsumura, City Hospitals, Baltimore, Md.....	U. of Md. 1929
Dr. Henry D. Bongiorno, 70 Summer St., Passaic, N. J....	U. of Md. 1929
Dr. Jos. M. Corsello, 152 West 9th St., Brooklyn, N. Y....	U. of Md. 1929
Dr. Selig Brauer, Jersey City, N. J.....	U. of Md. 1929
Dr. C. R. Feingold, Brooklyn, N. Y.....	U. of Md. 1929
Dr. A. Calais, 3232 Cedar Ave., Baltimore, Md.....	U. of Md. 1929
Dr. H. T. Safford, Union Memorial Hosp., Baltimore, Md...	U. of Md. 1929
Dr. W. J. Sullivan, So. Balto. Gen. Hospital, Baltimore, Md...	U. of Md. 1929
Dr. M. Franklin Birely, Union Memo. Hosp., Baltimore, Md...	U. of Md. 1929
Dr. S. J. Penhansky, 847 Ave. C, Bayonne, N. J.....	U. of Md. 1929
Dr. Morris Tannenbaum, 124 Featherbed La., Bronx, N. Y...	U. of Md. 1929
Dr. I. J. Morgan, 5648 Phillips Ave., Pittsburgh, Pa.....	U. of Md. 1929
Dr. Jacob H. Conn, Baltimore, Md.....	U. of Md. 1929
Dr. J. S. Fifer, Baltimore, Md.....	U. of Md. 1929
Dr. I. Neistadt, 820 E. Baltimore St., Baltimore, Md.....	U. of Md. 1929
Dr. Albert E. Sikorsky, Baltimore, Md.....	U. of Md. 1929
Dr. J. Peter Meranski, Hartford, Conn.....	U. of Md. 1929
Dr. Silvio A. Alessi, Baltimore, Md.....	U. of Md. 1929

Dr. B. Bardfield, Baltimore, Md.....	U. of Md. 1929
Dr. Raymond Sekeřak, 408 Bornum Ave., Bridgeport, Conn..	U. of Md. 1929
Dr. Sascha F. Guiglia, 2647 N. Charles St., Baltimore, Md..	U. of Md. 1929
Dr. W. Paul Dailey, 23 Walnut St., Steelton, Pa.....	U. of Md. 1929
Dr. John J. Haney, 167 Cooper St., Trenton, N. J.....	U. of Md. 1929
Dr. J. M. Serra, Brooklyn Heights, Md.....	U. of Md. 1929
Dr. Walter H. Levy, New York City.....	U. of Md. 1929
Dr. Willard F. Daniels, Elkins, W. Va.....	U. of Md. 1929
Dr. S. T. Helms, Blacksburg, Va.....	U. of Md. 1929
Dr. L. M. Overton, Rocky Mount, N. C.....	U. of Md. 1929
Dr. J. P. Bowen, Bolton, S. C.....	U. of Md. 1929
Dr. B. H. Kendall, Shelby, N. C.....	U. of Md. 1929
Dr. E. Neuman, 2745 Lancashire Road, Cleveland Hgts., O..	U. of Md. 1929
Dr. Bernard Botsch, 2116 Wilkens Ave., Baltimore, Md....	U. of Md. 1929
Dr. John E. Murphy, 811 S. Valley Ave., Olyphant, Pa.....	U. of Md. 1929
Dr. Jos. T. McAndrew, 144 W. Pike St., Clarksburg, W. Va..	U. of Md. 1929
Dr. David Givner, 307 N. Broadway, Baltimore, Md.....	U. of Md. 1929
Dr. T. F. Vestal, Winston-Salem, N. C.....	U. of Md. 1929
Dr. M. C. Porterfield, Baltimore, Md.....	U. of Md. 1929
Dr. J. V. Safer, Jacksonville, Fla.....	U. of Md. 1929
Dr. Walter H. Levy, New York City.....	U. of Md. 1929
Dr. William Yudkoff, Bayonne, N. J.....	U. of Md. 1929

PERSONALS

Announcements have reached this office of the following appointments:

DR. WILLIAM P. BLEDSOE, P. & S. (1905), has recently been appointed superintendent of the Springfield State Hospital, Sykesville, Maryland. Dr. Bledsoe was for nine years Superintendent of the U. S. Veterans' Hospital. He was a member of the U. S. Army Medical Corps during the World War, serving part of his time overseas. More recently he has been in charge of the Veterans' Bureau Hospital, Chicago, Ill.

DR. BERNARD LEVINSON, 585 East End Ave., New York City, U. of M. (1908), has recently been appointed Adjunct Professor of Gastroenterology at the New York Polyclinic Medical School and Hospital. He was also appointed Assistant Attending Physician to the Hospital.

DR. W. HORSLEY GANTT, formerly an assistant resident in medicine at the University Hospital, has been working for four years in the laboratory of Professor Pavlov at Leningrad. Dr. Gantt has

just published the first English translation of Professor Pavlov's work on the conditioned reflexes.

Dr. JOHN ROBERTS PHILLIPS, class of 1927, is now established in the Mayo Clinic as a Fellow in Surgery. Dr. RICHARD SPEIGHT ANDERSON, class of 1924, and Dr. ALFRED CLAWSON, 1924, are also in residence as Fellows at the same institution.

Dr. HERMAN CHOR, class of 1928, has just received his appointment as Fellow in Neurology in the Mayo Foundation.

Dr. T. NELSON CAREY, class of 1927, has just been appointed to a fellowship in medicine in the Johns Hopkins Medical School.

Dr. THOMAS B. TURNER, class of 1925, is an instructor in medicine in the Johns Hopkins Medical School.

INTERCOLLEGIATE ALUMNI CLUB

Three University of Maryland alumni, George B. Oehm, Harley M. Penn and Dr. Reed A. Shenkwiler, have joined the Intercollegiate Alumni Club, Detroit, and are taking an active part in its affairs. The Club recently announced its plan of building a clubhouse in downtown Detroit for college and university men. Membership in the Club now numbers one thousand. Schools with larger representation include: University of Michigan, 272; University of Detroit, 71; Illinois, 52; Cornell, 39; Harvard, 34; Purdue, 32; Ohio State, 29; Michigan State, 27; Wisconsin, 26; Detroit College of Law, 19; Minnesota, 18; Detroit College of Medicine, 17; University of Pennsylvania, 16; Penn State, 15; Yale, 14; Notre Dame, 11; Kansas, 11, and Princeton, 10. The list includes representatives of one hundred and twenty-seven colleges and universities of the United States and Canada and several foreign countries.

Detroit with a million and a half population has had to date no representative university club. The Intercollegiate Alumni Club is an outgrowth of the Intercollegiate Association, formed in Detroit fifteen years ago. The Club was born the first of January with less than a hundred members, but in the interval to the present time one thousand names have been placed upon the Club roster, a feat which is believed to be unequalled in Club organization inasmuch as membership is by invitation only and no paid promoters are employed. When approximately two thousand have become members a club-

house will be erected. One attractive feature of the Club is that it will provide a setting for the various undergraduate entertainments visiting Detroit, such as glee and musical club programs and student dramatic efforts. These affairs have hitherto been given in hotels and private golf or boat clubs. The Club will also be the Detroit headquarters for visiting college and university officials besides providing a central meeting place for the various alumni groups in the city.



DR. J. CLEMENT CLARK

DEATHS

The following laudatory tribute was paid our late fellow-alumnus, Dr. William Eugene Delaney, a most highly respected and a foremost physician of Williamsport, Pa., P. and S., class of 1891, aged 65, a past vice-president of the Medical Society of Pennsylvania, who departed this life August 25, 1928, of heart disease following an illness of seven weeks' duration.

Of Dr. William E. Delaney, who died Saturday evening at his home here, aged 65 years, it might be said that he devoted his life to medicine not so much as a professional career as a mission of service to humanity.

Especially does this characterization apply to the score of years which Dr. Delaney spent at Slate Run, Pa., up in the Pine Creek Valley, a period during which he ably met the responsibilities of general practitioner in a scattered district which imposed great demands upon him.

In those days the Pine Creek Valley was a busy lumber center, and to the lumber camps and to remote habitations Dr. Delaney was called to minister in the various branches of the healing art. In such a field the doctor is constantly at the call of those who must rely solely upon him for medical assistance, and Dr. Delaney never failed to meet these calls. Many of them were of an emergency nature, for accidents are frequent in the lumber woods. A suggestion of what this meant was occasionally revealed by Dr. Delaney when, for illustration, he told of having amputated mangled limbs without the facilities of an operating room and without any assistance.

It was quite natural that Dr. Delaney should have been universally respected and claimed as a personal friend by the residents of the Pine Creek Valley. Those of his former patients who remain in that valley will hold his memory in cherished affection. Their respect for him is shared by the large number of Williamsport residents who have known Dr. Delaney as patient and as friend since he left Slate Run seventeen years ago to locate in this city. His practice here was somewhat different from that to which he had devoted his younger years, but he brought to it the same sympathetic willingness and eagerness to be of service.—(The Williamsport *Sun*, August 27, 1928).

Dr. Robert Hardaway Jones, Petersburg, Va.; class of 1882; aged 67; died, December 19, 1928, of injuries received when struck by an automobile.

Dr. Thomas Dyer Mudd, Washington, D. C.; P. & S., class of 1894; aged 66; died, February 11, 1929, of arterio-sclerosis, acute myocarditis and cirrhosis of liver.

Dr. Francis Lewis Benson, Elmira, New York; P. & S., class of 1910; aged 50; died, January 27, 1929, of chronic nephritis and myocarditis.

Dr. John Edgar Person, Pikeville, N. C.; P. & S., class of 1875; aged 77; died, January 21, 1929, of laryngeal tuberculosis.

Dr. Charles B. Blubaugh, Parkersburg, W. Va.; class of 1880; aged 60; died, October 5, 1928, of cervical adenitis and spinal metastasis from a renal tumor.

Dr. Thomas R. Harding, Yadkinville, N. C., P. & S., class of 1885; formerly county health officer and member of the State Legislature; aged 73; died, February 6, 1929, of cerebral hemorrhage.

Dr. Robert Lincoln Taylor, Pittsburgh, Pa.; P. & S., class of 1895; aged 61; died, December 6, 1928, of nephritis and cirrhosis of the liver.

Dr. James J. Sweeney, Philadelphia, Pa.; B. M. C., class of 1902; aged 60; died, February 16, 1929, following an operation.

Dr. Eugene Grisson Denson, Meridian, Miss.; class of 1898; served during the World War; aged 55; died, February 20, 1929.

Dr. Walter Henry O'Neal, Gettysburg, Pa.; class of 1871; aged 79; died in February, 1929, of heart disease.

Dr. Thomas Sage, Caseville, Mich.; P. & S., class of 1904; formerly professor of chemistry and pharmacology, Medical College of Virginia; professor of pharmacology and therapeutics, Detroit College of Medicine and Surgery, and professor and director of the department of materia medica and pharmacology, Chicago College of Medicine; health officer of Caseville; aged 59; died, February 25, 1929, of cerebral hemorrhage and chronic nephritis.

Dr. Samuel A. Keene, Baltimore, Md.; class of 1865; aged 85; died, February 4, 1929, of senility. Dr. Keene at the time of his retirement from active practice, some two years ago, was one of the oldest general practitioners in Baltimore, where he had resided for 35 years, following some years of work in Dorchester County and at Ellicott City, Howard County, Md. He was medical examiner for the Child Labor Bureau and formerly acted as physician for the Woodstock Jesuit College, Rock Hill College and St. Charles' College.

Dr. Brice W. Goldsborough, Cambridge, Md.; U. of Va., class of 1880, and for one session an undergraduate in the medical department of the University of Maryland, one of the most widely known physicians on the Eastern Shore, aged 69; died, March 21, 1929, of heart disease.

Dr. Frank S. Goodman, Washington, D. C.; P. & S., class of 1881; chief pharmacist of the United States Public Health Service; aged 68; died, February 22, 1929, of coronary thrombosis and arteriosclerosis.

Dr. Francis A. Warner, Baltimore, Md.; class of 1873; aged 82; died, May 11, 1929.

Dr. Anthony Paul Brady, Painesville, Ohio; B. M. C., class of 1893; aged 58; died, April 28, 1929, of coronary sclerosis and angina pectoris.

Dr. Harvey Bruce Summerville, Rimersburg Pa.; P. & S., class of 1890; served during the World War; aged 66; died, April 2, 1929, of pneumonia.

Dr. John Sedwick Dorsey, Washington, D. C.; P. & S., class of 1890; aged 60; was found dead, April 23, 1929, of poison.

Dr. Elgin H. White, Rives, Tenn.; P. & S., class of 1891; aged 68; died, April 24, 1929, of cerebral hemorrhage.



DEATHS

Dr. Edward R. Hardenbrook, Rochester, N. Y.; P. & S., class of 1893; also University of Buffalo, School of Medicine, class of 1894; aged 58; died, March 28, 1929, at sea of sunstroke and malaria, contracted in Africa while on a trip around the world.

Dr. John P. Fennessy, Providence, R. I.; P. & S., class of 1905; formerly a member of the State Legislature; aged 56; died, March 26, 1929, of lobar pneumonia and cerebral arteriosclerosis.

Dr. Silas C. Frederick, Wilmington, Del.; B. M. C., class of 1894; for two years president of the Board of Health; aged 58; died, April 4, 1929, of myocarditis.

Dr. David Russell Talbott, Dunkirk, Md.; P. & S., class of 1897; aged 53; died, April 28, 1929, following an illness of six weeks.

Dr. Samuel Searle Houlton, Baltimore, Md.; B. M. C., class of 1897; aged 56; died, March 24, 1929, of heart disease.

Dr. Darius Earl Musgreve, Barboursville, W. Va.; P. & S., class of 1902; aged 59; died, March 16, 1929.

Dr. Benjamin L. Dillard, Scottsville, Va.; class of 1883; aged 71; died, April 12, 1929, of heart disease.

Dr. Jacob Leshur Schoch, Shippensburg, Pa.; class of 1870; aged 86; died, April 5, 1929, of chronic nephritis.

Dr. Alfred Christie, Brunswick, Ga.; P. & S., class of 1897; aged 65; died, April 19, 1929, of cerebral hemorrhage.

Dr. Frank Harvey Coops, Bridgeport, Conn.; P. & S., class of 1896; aged 63; died, February 19, 1929, of Myocarditis.

Dr. Joseph Bruff Seth, St. Michaels, Md.; class of 1899; aged 51; died, April 18, 1929, of apoplexy.

Dr. John William Wallace, Covington, Va.; class of 1891; aged 61; died, April 1, 1929, of diabetes mellitus and heart disease.

Dr. Carroll Sumner Howell, Marion, S. C.; B. M. C., class of 1907; served during the World War; aged 46; died, February 27, 1929.

Dr. John Sweaney, Durham, N. C.; P. & S., class of 1886; aged 71; died, March 23, 1929, of myocarditis.

Dr. Joseph Smith Horner, Hot Springs National Park, Ark.; class of 1883; aged 70; died, February 8, 1929, of cerebral hemorrhage.

Dr. Benjamin Franklin Camp, White Springs, Fla.; P. & S., class of 1879; aged 76; died, February 10, 1929, of cerebral hemorrhage.

Dr. Chester F. Markel, Columbia, Pa.; P. & S., class of 1876; aged 76; died, March 3, 1929, of cerebral hemorrhage.

Dr. Stephen Douglas Few, Parsons, W. Va.; class of 1892; aged 68; died, January 23, 1929, of pneumonia.

Dr. Frank L. Moyer, Williamsport, Pa.; P. & S., class of 1891; aged 75; died, March 26, 1929.

Dr. C. W. Bartlett, Tampa, Fla.; class of 1893; city health officer and pioneer physician and health authority of South Florida; aged 59; died, May 29, 1929, of heart disease. Dr. Bartlett was born in Sagua, La Grande, Cuba,

April 26, 1870. When 15 years old he was sent to the Episcopal High School, Alexandria, Va. Later he went to St. John's College at Fordham, N. Y., thence to the University of Maryland, School of Medicine. In 1894 he returned to Cuba and studied yellow fever and other tropical diseases. The following year he removed to Tampa, Fla., and engaged in private practice. When the Spanish-American War broke out Dr. Bartlett went to Cuba with the United States Army as acting assistant surgeon and for two and one-half years he remained in Havana under General Gorgas. On his return to Tampa he was made port sanitary inspector of the Tampa Bay Quarantine Station on Mullet Key, and a year later was made agent for the State Board of Health for Hillsborough County.

Dr. William Herbert Lewis, Lawrenceville, Va.; class of 1896; aged 56; died, May 3, 1929, of arteriosclerosis and heart disease.

Dr. Joseph Clement Clark, Sykesville, Md.; class of 1880; formerly associate professor of psychiatry at his alma mater; until recently superintendent of the Springfield State Hospital; aged 70; died, May 28, 1929, of arteriosclerosis. Dr. Clark, who was born August 3, 1858, had been in ill health for a year, and only on May 4th last was made superintendent emeritus of the Springfield State Hospital. He attended St. John's College, Annapolis, for three terms, but was compelled to discontinue his studies in this institution on account of ill health. From 1892 until 1896 he was health officer for Caroline County. After a term in the Maryland House of Delegates he was appointed assistant superintendent of Spring Grove Hospital, Catonsville, Md., to succeed Dr. George H. Rohe, who had been made superintendent of Springfield State Hospital. Following Dr. Rohe's death in 1899, Dr. Clark was made superintendent of the latter institution. Dr. Clark was considered a pioneer in the modern treatment of the insane. He was said to have revolutionized the care of mental cases in Maryland.

Dr. Edward Percy Odenhal, Oteen, N. C.; class of 1895; medical officer in charge of United States Veteran Hospital, No. 60; aged 55; died, April 27, 1929.

Dr. Frazier Kacy Hutcheson, Dayton, Ohio; P. & S., class of 1894; aged 62; died, May 5, 1929, of carcinoma of the stomach.

Dr. William E. Clymer, Elliott, Ohio; P. & S., class of 1890; aged 65; died, May 18, 1929, of cerebral hemorrhage.

Dr. James Cornelius Braswell, Whitakers, N. C.; class of 1882; aged 70; died, April 7, 1929, of heart disease.

Dr. Charles Wesley McElfresh, Baltimore, Md.; class of 1889; aged 63; died, June 13, 1929, of arteriosclerosis. Dr. McElfresh was born at Fairmont, West Va. At the time of his death he was a professor of clinical medicine at his alma mater. In 1908 Dr. McElfresh became interested in metabolic disorders, and so far as is known, was the first in Baltimore, and perhaps in the world, to use blood chemistry tests for the purpose of determining the physiological activity of the kidneys. The information thus gained he applied to the treatment of hypertension and psoriasis. He rea-

soned it was more important to know what the kidneys were holding back rather than the amount of nitrogenous substances eliminated by this organ. That which was passed, he said, could do no harm; it was that which was retained which was harmful to the system. After finding out what amount of non-protein nitrogen was circulating in the blood, he tried to balance the intake with the output by regulating the diet. Certainly he was a pioneer in this field of medical effort. Unfortunately, as he did not publish the results of his investigations, his work was known only to a few of his Baltimore conferees at the University of Maryland. For this reason his views have had very little influence outside of the University of Maryland circle with which he was associated. He was a hard worker, and thought of scarcely anything but medicine. As a bedside teacher he had few equals. He did much to stimulate the staff of the University of Maryland Hospital in the study of medical problems. The University is debtor to him for much good work. He was a good doctor. Those of us who knew him will hold his memory in the highest regard.

Dr. William B. Wheeler, Boonsboro, Md.; class of 1862; Civil War veteran; aged 90, and probably the oldest living medical alumnus of the University of Maryland; died, May 11, 1929, of bronchopneumonia. Dr. William C. Wheeler, of Boonsboro, is a son.

Dr. Aaron Bruce Barnett, Wheeling, W. Va.; class of 1879; aged 82; died, June 1, 1929.

Dr. William Coe McKeeby, Syracuse, N. Y.; class of 1887; aged 64; died, May 28, 1929, of pneumonia.

Dr. George Lawrence White, Lieutenant Commander, U. S. Navy, M. C.; class of 1917, aged 35; was drowned, June 28, 1929, of Panama. He served during the World War and while attached to the 6th U. S. Marines at Chateau Thierry, was wounded in the leg and later was gassed during the fighting in the Argonne Forest. He held the Navy Cross for heroism in action.

Dr. George F. Galloway, Federalsburg, Md.; P. & S., class of 1894; aged 55; died, June 20, 1929.

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BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. XIV

JULY, 1929

No. 1

ANNUAL ANNOUNCEMENT

SESSION 1929-30

CALENDAR OF BALTIMORE SCHOOLS

UNIVERSITY OF MARYLAND

Session 1929-1930

FIRST SEMESTER

1929

Monday, September 23—Registration begins.

Monday, September 30—Instruction begins with the first scheduled period.

Monday, October 7—Last day to register without paying fine of \$5.00.

Wednesday, November 27—Thanksgiving.

Saturday, December 21—Christmas recess begins after the last scheduled period.

1930

Monday, January 6—Instruction resumed with the first scheduled period.

Saturday, January 25—First semester ends after the last scheduled period.

SECOND SEMESTER

Monday, January 13—Registration begins for second semester.

Monday, January 27—Instruction begins with the first scheduled period.

Saturday, February 3—Last day to register without paying fine of \$5.00.

Saturday, February 22—Holiday (Washington's Birthday).

Thursday, April 17—Easter recess begins after the last scheduled period.

Tuesday, April 22—Instruction resumed with the first scheduled period.

Saturday, June 7—Commencement Day.

THE UNIVERSITY OF MARYLAND

Control of the University of Maryland is vested in a Board of nine Regents, appointed by the Governor and confirmed by the Senate for terms of nine years each. The general administration of the University is vested in the President. The University Council is an advisory body, composed of the President, the Assistant to the President, the Director of the Agricultural Experiment Station, the Director of the Extension Service, and the Deans. The University Council acts upon all matters having relation to the University as a whole, or to cooperative work between the constituent groups. Each school has its own Faculty Council, composed of the Dean and members of its Faculty; each Faculty Council controls the internal affairs of the group it represents.

The University has the following educational organization:

- The College of Agriculture,
- The College of Engineering,
- The College of Arts and Sciences,
- The School of Medicine,
- The School of Law,
- The School of Dentistry,
- The School of Pharmacy,
- The College of Education,
- The College of Home Economics,
- The Graduate School,
- The Summer School,
- The Department of Physical Education and Recreation.

The Schools of Medicine, Law, Dentistry and Pharmacy are located in Baltimore; the others in College Park, Maryland.

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EDWARD S. JOHNSON, M.D., Associate Professor of Surgery.
H. K. FLECK, M.D., Associate Professor of Ophthalmology.
S. LLOYD JOHNSON, A.B., M.D., Assistant Professor of Medicine.
JOHN G. HUCK, M.D., Assistant Professor of Medicine.
GEORGE MCLEAN, M.D., Assistant Professor of Medicine.
C. C. HABLSTON, M.D., Assistant Professor of Medicine.
MAURICE FELDMAN, M.D., Assistant Professor of Gastro-Enterology.
ROBERT B. WRIGHT, M.D., Assistant Professor of Pathology.
L. A. M. KRAUSE, M.D., Assistant Professor of Medicine.
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MILFORD LEVY, M.D., Assistant Professor of Neurology.
JOHN TRABAND, M.D., Assistant Professor of Pediatrics.
CLARENCE E. MACKE, M.D., Assistant Professor of Pediatrics.
ALBERT JAFFE, M.D., Assistant Professor of Pediatrics.
O. G. HARNE, A.B., Associate in Physiology.
JOHN R. ABERCROMBIE, A.B., M.D., Associate in Dermatology.
E. H. HAYWARD, M.D., Associate in Surgery.
GEORGE A. STRAUSS, JR., M.D., Associate in Gynecology.
JOSEPH I. KEMLER, M.D., Associate in Ophthalmology.
R. G. WILLSE, M.D., Associate in Gynecology.
SAMUEL W. MOORE, D.D.S., Associate in Anaesthesia.
FRANK N. OGDEN, M.D., Associate in Biological Chemistry.
EMIL NOVAK, M.D., Associate in Obstetrics.
E. P. SMITH, M.D., Associate in Obstetrics.
THOMAS K. GALVIN, M.D., Associate in Gynecology.
HOWARD E. ASHBURY, M.D., Associate in Roentgenology.
FRANKLIN B. ANDERSON, M.D., Associate in Diseases of Throat and Nose.
W. H. DANIELS, M.D., Associate in Orthopaedic Surgery.
HARRIS GOLDMAN, M.D., Associate in Genito-Urinary Surgery.
C. A. REIFSCHNEIDER, M.D., Associate in Surgery.

M. J. HANNA, M.D., Associate in Surgery.
A. H. WOOD, M.D., Associate in Genito-Urinary Surgery.
ALBERT E. GOLDSTEIN, M.D., Associate in Pathology.
H. M. BUBERT, M.D., Associate in Medicine and Instructor in Pathology.
ZACHARIAH MORGAN, M.D., Associate in Gastro-Enterology.
J. M. HUNDLEY, JR., M.D., Associate in Gynecology.
LEO BRADY, M.D., Associate in Gynecology.
HARRY L. ROGERS, M.D., Associate in Orthopaedic Surgery.
H. M. FOSTER, M.D., Associate in Surgery.
D. J. PESSAGNO, M.D., Associate in Surgery.
J. G. M. REESE, M.D., Associate in Obstetrics.
M. A. NOVEY, A.B., M.D., Associate in Obstetrics and Instructor in Pathology.
W. S. LOVE, JR., M.D., Associate in Medicine and Instructor in Pathology.
A. A. SUSSMAN, M.D., Associate in Medicine and Instructor in Pathology.
LEON FREEDOM, M.D., Associate in Neurology and Instructor in Pathology.
SAMUEL GLICK, M.D., Associate in Pediatrics,
EMIL G. SCHMIDT, Ph.D., Associate in Biological Chemistry.
C. F. HORINE, M.D., Associate in Surgery.
W. J. TODD, M.D., Associate in Pediatrics.
W. F. GEYER, M.D., Associate in Pediatrics.
CLEWELL HOWELL, M.D., Associate in Pediatrics.
SAMUEL GLICK, M.D., Associate in Pediatrics.
WALTER C. MERKLE, M.D., Associate in Pathology.
JOHN G. MURRAY, JR., M.D., Associate in Obstetrics.
MONTE EDWARDS, M.D., Associate in Diseases of the Rectum and Colon.
RAYMOND LENHARD, A.B., M.D., Associate in Orthopaedic Surgery.
LEWIS B. HILL, M.D., Associate in Psychiatry.
JOSEPH SINDLER, M.D., Associate in Gastro-Enterology.
CLEMENT R. MONROE, M.D., Instructor in Orthopaedic Surgery.
CLIFFORD LEE WILMOTH, M.D., Instructor in Orthopaedic Surgery.
JOHN F. LUTZ, M.D., Instructor in Histology.
W. G. QUEEN, M.D., Instructor in Anaesthesia.
HENRY F. BUETTNER, M.D., Instructor in Bacteriology.
J. A. F. PFEIFFER, M.D., Instructor in Bacteriology.
JOSEPH E. GATELY, M.D., Instructor in Dermatology.
R. F. MCKENZIE, M.D., Instructor in Diseases of the Throat and Nose.
F. X. KEARNEY, M.D., Instructor in Surgery.
HARRY GOLDSMITH, M.D., Instructor in Psychiatry.
L. K. FARGO, M.D., Instructor in Genito-Urinary Diseases.
WILLIAM MICHEL, M.D., Instructor in Medicine.
J. J. ERWIN, M.D., Instructor in Obstetrics.
ISADORE A. SIEGEL, A.B., M.D., Instructor in Obstetrics.
N. J. DAVIDOV, M.D., Instructor in Gastro-Enterology.
M. KOPPLEMAN, M.D., Instructor in Gastro-Enterology.
F. S. OREM, M.D., Instructor in Pediatrics.
M. G. GICHNER, M.D., Instructor in Medicine.

FREDERICK B. DART, M.D., Instructor in Pediatrics.
V. L. ELLICOTT, M.D., Instructor in Hygiene and Public Health.
M. G. TULL, M.D., Instructor in Hygiene and Public Health.
ISADORE I. LEVY, M.D., Instructor in Gastro-Enterology.
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RUTH MUSSEY, B.A., Instructor in Pharmacology.
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J. H. COLLINSON, M.D., Assistant in Genito-Urinary Diseases.
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H. B. McELWAIN, M.D., Assistant in Surgery.
ROBERT W. JOHNSON, M.D., Assistant in Surgery.
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JOHN A. O'CONNOR, M.D., Assistant in Surgery.
A. V. BUCHNESS, M.D., Assistant in Surgery.
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WILLIAM EMRICH, M.D., Assistant in Genito-Urinary Surgery.
W. H. WOODY, M.D., Assistant in Medicine.
JOSEPH POKORNEY, M.D., Assistant in Histology.
R. W. JOHNSON, M.D., Assistant in Histology.

C. V. HOOPER, Assistant in Gastro-Enterology.
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J. HULLA, M.D., Assistant in Histology.
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M. PAUL BYERLY, M.D., Assistant in Pediatrics.
HENRY GINSBERG, M.D., Assistant in Pediatrics.
WALTER B. JOHNSON, M.D., Assistant in Pediatrics.
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G. A. FRITZ, M.D., Assistant in Surgery.
H. L. WHEELER, M.D., Assistant in Surgery.
W. W. WALKER, M.D., Assistant in Surgery.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

As a result of the merger accomplished in 1915 the combined schools offer the student the abundant resources of both institutions, and, in addition, by earlier combination with the Baltimore Medical College, the entire equipment of three large medical colleges.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was chartered in 1807, under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties, of Divinity, of Law, and of Arts and Sciences, and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

Established thus for more than a century, the School of Medicine of the University of Maryland has always been a leading medical college, especially prominent in the South and widely known and highly honored throughout the country.

The beautiful college building at Lombard and Greene Streets, erected in 1812, is the oldest structure in America devoted to medical teaching. Here was founded one of the first medical libraries and the first medical college library in the United States.

Here for the first time in America dissecting was made a compulsory part of the curriculum; here instruction in Dentistry was first given (1837), and here were first installed independent chairs for the teaching of Diseases of Women and Children (1867), and of Eye and Ear Diseases (1873).

The School of Medicine was one of the first to provide for adequate clinical instruction by the erection in 1823 of its own hospital, and in this hospital intramural residency for the senior student was first established.

In 1913, juncture was brought about with the Baltimore Medical College, an institution of 32 years' growth. By this association the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated under Legislative enactment in 1872, and established on Hanover Street in a building afterwards known as the Maternite, the first obstetrical hospital in Maryland. In 1878 union was effected with the Washington University School of Medicine, in existence since 1827, and the college was removed to its present location at Calvert and Saratoga Streets. By this arrangement medical control of the City Hospital, now the Mercy Hospital, was obtained, and on this foundation in 1899 the present admirable college building was erected.

ORGANIZATION OF THE SCHOOL OF MEDICINE

LABORATORY AND CLINICAL FACILITIES

The Laboratories

The laboratories are located at two centers, the group of buildings at Greene and Lombard Streets, and at 32 and 34 South Paca Street. The schedule is so adjusted that the laboratory periods are placed with a view of obviating unnecessary movement on the part of the classes. The building known as Gray Laboratory, at Greene and Lombard Streets, houses three departments. The Anatomical Laboratory is placed upon the top floor, where skylights and an auxiliary modern system of electric lighting gives adequate illumination of the subjects. On this floor are the office of the department and the necessary preparation rooms. The Department of Pharmacology occupies the second floor. There is a large room for the general student laboratory, which is thoroughly equipped with apparatus of recent acquisition, and in addition contains many instruments of unique and original design. With office and stockroom adjoining, this laboratory is complete for student experimentation. On the first floor of Gray Laboratory is the Department of Physiology. In addition to the large student laboratory, which is constructed for sections of forty-five students,

there are rooms for the departmental office, preparation of material, and storage of apparatus. An additional room is devoted exclusively to mammalian experiments. In this building there is maintained an animal room where is kept an abundance of material for experimental purposes. The embalming and storage plant for the Department of Anatomy is in physical connection with the building and its special departments. The laboratories of physiology and pharmacology are completely equipped with apparatus lockers so that in accord with the best ideas of instruction, the students work in groups of two each, and each group has sufficient apparatus so that the experimental work can be carried on without delay or recourse to a general stockroom.

The laboratories of Pathology and Biochemistry, are located in the laboratory building on Greene St. above Lombard. The former department has a large student laboratory with a capacity of ninety; the tables are so placed as to secure the most satisfactory illumination for microscopic work, in addition, all of the tables are electrically equipped for substage illumination. This equipment is also provided for all laboratories where microscopic work obtains. The museum of the Department of Pathology adjoins the student laboratory. Here are available for demonstration about fifteen hundred carefully prepared and mounted specimens, and for laboratory instruction and study, an abundance of autopsy material with complete clinical histories. Several preparation, research, and office rooms communicate with the other rooms of this department. The laboratory of Biochemistry is constructed and equipped for sections of fifty. The laboratory is completely equipped for the facilitation of work. The office and stockroom adjoin. In the Main Building is the Museum of Anatomy, where are arranged for student reference, specimens which represent the careful selection of material over a period of many years. In the University Hospital is the Student Laboratory for the analytical studies by those students who are serving as clinical clerks on the wards. A similar laboratory is maintained in the building at the northwest corner of Saratoga and Calvert Streets, for the student work on the wards of the Mercy Hospital.

At 32 and 34 South Paca Street are two laboratories for Bacteriology, Histology, and Clinical Pathology. The two laboratories accommodate one hundred and twenty-five students or the full class,

and are equipped with necessary lockers for microscopes and apparatus. Each of the departments housed in this building are provided with their individual offices, preparation and stockrooms.

Clinical Facilities

UNIVERSITY HOSPITAL

The University Hospital, which is the property of the University of Maryland, is the oldest institution for the care of the sick in the State of Maryland. It was opened in September, 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for eye cases.

The present hospital has a capacity of 275 beds devoted to general medicine, surgery, obstetrics and the various medical and surgical specialties. It is equipped with a thoroughly modern X-ray department and clinical laboratory, and a post-mortem building which is constructed with special reference to the instruction of students in *pathological anatomy*.

The hospital is situated opposite the medical school buildings so that the students lose no time in passing from the lecture halls and laboratories to the clinical amphitheater, dispensary and wards.

Owing to its situation, being adjacent to the largest manufacturing district of the city and the shipping district, large numbers of accident cases are received. These combined with the cases of many sick seamen and with patients from our own city furnish a large amount of clinical material. Accommodations for thirty obstetrical patients are provided in the hospital for the purpose of furnishing actual obstetrical experience to each member of the graduating class.

In connection with the University Hospital an outdoor obstetrical clinic is conducted, in which every case has careful pre-natal supervision, is attended during labor by a senior student, supervised by a hospital physician and assisted by a graduate nurse, and is visited during the puerperium by the attending student and graduate nurse. Careful pre-natal, labor and puerperal records are kept, making this work of extreme value to the medical student, not only from the obstetrical standpoint, but in making him appreciate the value of social service and public health work.

During the year ending December 31, 1927, 264 cases were delivered in the hospital and 1133 cases in the outdoor department. Students in the graduating class delivered an average of fourteen cases, each student being required to deliver twelve cases.

The dispensaries associated with the University Hospital and the Mercy Hospital are organized upon a uniform plan in order that the teaching may be the same in each. Each dispensary has the following departments: Medicine, Surgery, Obstetrics, Children, Eye and Ear, Genito-Urinary, Gynecology, Gastro-Enterology, Neurology, Orthopaedics, Proctology, Dermatology, Throat and Nose, Tuberculosis and Psychiatry.

All students in their junior year work in the departments of Medicine and Surgery each day in one of the dispensaries.

All students in their senior year work in the special departments one hour each day.

HOSPITAL COUNCIL

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A. J. LOMAS, M.D., *Superintendent of the Hospital.*

MISS ANNIE CRIGHTON, R.N., *Superintendent of Nurses.*

J. ALLISON MUIR.

G. M. SHRIVER.

W. B. BROOKS.

MISS FLORENCE SADTLER, *Representing Woman's Auxiliary Board.*

Representing Hospital Staff

J. W. HOLLAND, M.D.

C. REID EDWARDS, M.D.

Representing Medical Alumni

CHARLES W. MAXSON, M.D.

FRANK W. KEATING, M.D.

UNIVERSITY HOSPITAL STAFF

Superintendent of the Hospital, A. J. LOMAS, M.D.

Physicians

GORDON WILSON, M.D.

MAURICE C. PINCOFFS, B.S., M.D.

HARRY M. STEIN, M.D.

G. CARROLL LOCKARD, M.D.

WALTER A. BAETJER, M.D.

JOSEPH E. GICHNER, M.D.

C. C. HABLSTON, M.D.

WILLIAM H. SMITH, M.D.

Gastro-Enterologist

JULIUS FRIEDENWALD, A.M., M.D.

Neurologist

IRVING J. SPEAR, M.D.

Psychiatrist

R. M. CHAPMAN, M.D.

Pediatrician

C. LORING JOSLIN, M.D.

Pathologists

HUGH R. SPENCER, M.D.

S. LLOYD JOHNSON, M.D.

Surgeons

RANDOLPH WINSLOW, A.M., M.D., LL.D.

ARTHUR M. SHIPLEY, M.D., Sc.D.

JOSEPH W. HOLLAND, M.D.

PAGE EDMUNDS, M.D.

NATHAN WINSLOW, M.D.

FRANK S. LYNN, M.D.

CHARLES REID EDWARDS, M.D.

Laryngologists

EDWARD A. LOOPER, M.D.

FRANKLIN B. ANDERSON, M.D.

Proctologists

G. MILTON LINTHICUM, A.M., M.D.

J. DAWSON REEDER, M.D.

Orthopaedic Surgeons

ROBT. W. JOHNSON, JR., A.B., M.D.

COMPTON RIELY, M.D.

RAYMOND LENHARD, A.B., M.D.

Genito-Urinary Surgeons

W. H. TOULSON, A.B., M.Sc., M.D.

LYLE J. MILLAN, M.D.

Roentgenologists

HENRY J. WALTON, M.D.

EUGENE L. FLIPPIN, M.D.

Dermatologists

MELVIN S. ROSENTHAL, M.D.

HARRY M. ROBINSON, M.D.

Bronchoscopist

WAITMAN F. ZINN, M.D.

Anaesthetists

S. GRIFFITH DAVIS, M.D.

SAMUEL W. MOORE, D.D.S.

W. G. QUEEN, M.D.

Obstetricians

J. M. H. ROWLAND, M.D.

L. H. DOUGLASS, M.D.

M. A. NOVEY, A.B., M.D.

J. G. M. REESE, M.D.

ISADOR H. SIEGEL, A.B., M.D.

MAURICE SHAMER, M.D.

Ophthalmologists and Otolologists

CLYDE A. CLAPP, M.D.

HIRAM WOODS, A.M., M.D.

WILLIAM TARUN, M.D.

J. W. DOWNEY, M.D.

Gynecologists

W. S. GARDNER, M.D.

HUGH BRENT, M.D.

R. G. WILLSE, M.D.

UNIVERSITY HOSPITAL DISPENSARY STAFF

RESIDENT STAFF, 1929-1930

<i>Resident in Surgery</i>	CLYDE F. KARNS, M.D.
<i>Assistant Resident in Surgery</i>	HUGH ALVIN BAILEY, M.D.
<i>Assistant Resident in Surgery</i>	EARL F. LIMBACH, M.D.
<i>Assistant Resident in Surgery</i>	LUTHER E. LITTLE, M.D.
<i>Resident in Medicine</i>	LOUIS P. GUNDY, M.D.
<i>Assistant Resident in Medicine</i>	WILLIAM H. VARNEY, M.D.
<i>Resident in Gynecology</i>	CLARENCE H. PEAKE, M.D.
<i>Resident in Obstetrics</i>	W. E. HOFFMAN, M.D.
<i>Assistant Resident in Obstetrics</i>	DANIEL FISHER, M.D.
<i>Assistant Resident in Pediatrics</i>	WALTER B. JOHNSON, M.D.
<i>Assistant Resident in Roentgenology</i>	LUTHER E. LITTLE, M.D.

INTERNES

DR. W. BATEMAN DRAPER
 DR. LEROY SAVIN HECK
 DR. SAMUEL T. HELMS
 DR. HORTON E. HUGHES
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 DR. L. M. OVERTON

DR. M. C. PORTERFIELD
 DR. W. GLEN SPEICHER
 DR. LEON R. STATON
 DR. H. F. ULLRICH
 DR. T. F. VESTAL
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Medicine

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WILLIAM MICHEL, M.D.
 A. L. FEHSENFELD, M.D.
 S. B. WOLFE, M.D.

W. H. TRIPLETT, M.D.
 LEO LALLY, M.D.
 THOMAS COONAN, M.D.

Diseases of the Stomach and Intestines

J. H. ULLRICH, M.D., *Chief of Clinic*

JOSEPH SINDLER, M.D.
 Z. MORGAN, M.D.
 AUBREY C. SMOOT, M.D.

M. S. KOPPELMAN, M.D.
 N. J. DAVIDOV, M.D.
 C. VANCE HOOPER, M.D.

Neurology

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G. M. SETTLE, M.D., *Associate Professor of Neurology*

LEON FREEDOM, M.D., *Chief of Clinic*

BENJAMIN PUSHKIN, M.D.

ROBERT HODES, M.D.

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RALPH P. TRUITT, M.D., *Director*

STEWART B. SNISSSEN, M.D.

*Diseases of the Lungs*C. C. HABLISON, M.D., *Chief of Clinic**Diseases of Metabolism*H. M. STEIN, M.D., *Chief of Clinic**Cardiovascular Diseases*WILLIAM S. LOVE, JR., M.D., *Chief of Clinic**Allergy Clinic*H. M. BUBERT, M.D., *Chief of Clinic**Pediatrics*C. LORING JOSLIN, M.D., *Professor of Clinical Pediatrics*JOHN H. TRABAND, M.D., *Chief of Clinic*CLARENCE E. MACKE, M.D., *Chief of Clinic*

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F. STRATNER OREM, M.D.

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T. TERRY BURGER, M.D.

M. PAUL BYERLY, M.D.

LOUIS T. LAVY, M.D.

S. C. FELDMAN, M.D.

HENRY GINSBERG, M.D.

WALTER B. JOHNSON, M.D.

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W. R. JOHNSON, M.D.

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A. C. MONNINGER, M.D.

W. W. WALKER, M.D.

A. V. BUCKNESS, M. D.

G. A. FRITZ, M.D.

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W. A. SIMPSON, M.D.

I. H. MASERITZ, M.D.

CLEMENT R. MONROE, M.D.

MOSES GELLMAN, M.D.

*Genito-Urinary*W. H. TOULSON, M.D., *Chief of Clinic*

HARRIS GOLDMAN, M.D.

MILTON C. LANG, M.D.

J. H. COLLINSON, M.D.

H. C. KNAPP, M.D.

H. T. COLLENBERG, M.D.

L. K. FARGO, M.D.

LYLE J. MILLAN, M.D.

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EUGENE L. FLIPPIN, M.D.

LUTHER E. LITTLE, M.D.

*Dermatology*H. M. ROBINSON, M.D., *Chief of Clinic*

J. E. GATELY, M.D.

FRANCIS ELLIS, M.D.

*Nose and Throat*E. A. LOOPER, M.D., *Clinical Professor of Diseases of Throat and Nose*FRANKLIN B. ANDERSON, M.D., *Chief of Clinic*

F. A. HOLDEN, M.D.

THOMAS O'ROURKE, M.D.

CHARLES H. CAHN, M.D.

EDWARD TALBOTT, M.D.

JOSEPH NURKIN, M.D.

*Colon and Rectum*MONTE EDWARDS, M.D., *Chief of Clinic**Gynecology*

J. M. HUNDLEY, JR., M.D.

A. V. BUCHNESS, M.D.

LEO BRADY, M.D.

GEORGE L. WISSIG, M.D.

WILLIAM J. FULTON, M.D.

*Obstetrics*L. H. DOUGLAS, M.D., *Chief of Clinic*

J. G. M. REESE, M.D.

M. ALEXANDER NOVEY, M.D.

MAXWELL MAZER, M.D.

ISADORE A. SIEGEL, A.B., M.D.

MAURICE SHAMER, M.D.

*Eye and Ear*CLYDE A. CLAPP, M.D., *Professor of Ophthalmology*

J. W. DOWNEY, M.D.

CHARLES CAHN, M.D.

JOHN G. RUNKEL, M.D.

*Social Service*MISS GRACE PEARSON, *Directress*

Dispensary Report from October 1, 1927 to September 30, 1928

DEPARTMENTS	—CASES—		TOTAL
	NEW	OLD	
Pediatrics	2,865	19,302	22,167
Dermatology	5,072	9,947	15,019
Surgery	2,440	8,525	10,965
Obstetrics	1,700	5,955	7,655
Medicine	1,610	4,364	5,974
Genito-Urinary	841	4,953	5,794
Gynecology	1,312	2,759	4,071
Eye and Ear.....	1,296	2,695	3,991
Orthopaedic	345	1,813	2,158
Nose and Throat.....	1,010	953	1,963
Neurology	239	1,080	1,319
Gastro-Intestinal	197	702	899
Cardiology	111	374	485
Proctology	113	334	447
Tuberculosis	161	266	427
Cystoscopy	33	160	193
Total.....	19,345	64,182	83,527

In addition to the above, there were treated in the State Venereal Clinic 21,230 cases.

MERCY HOSPITAL

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga Streets, then owned by the Washington University, in 1874. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of administering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly growing demands upon it. However, it was not until 1888 that the Sisters of Mercy, with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the cornerstone of the present Hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space has compelled the erection of additions, until now there are accommodations for 351 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

Mercy Hospital is located in the center of a city of 800,000 inhabitants.

The clinical material in the free wards is under the exclusive control of the Faculty of the University of Maryland School of Medicine and College of Physicians and Surgeons.

It adjoins the College building, and all surgical patients from the public wards are operated upon in the College operating rooms. This union of the Hospital and College buildings greatly facilitates the clinical teaching, as there is no time lost in passing from one to the other.

Mercy Hospital is the hospital of the United Railways and Electric Company of Baltimore City, and receives patients from the Baltimore and Ohio Railroad Company and from the Pennsylvania Railroad Company and its branches.

BOARD OF GOVERNORS

SAMUEL M. SHOEMAKER, Esq., *Chairman*

SISTER M. CARMELITA
 SISTER M. SIENA
 SISTER M. HILDEGARDE
 SISTER M. ANITA
 SISTER M. EUPHRASIA

Dr. ALEXIUS McGLANNAN
 Dr. WALTER D. WISE
 Dr. THOMAS K. GALVIN
 Dr. ANDREW C. GILLIS
 Dr. STANDISH MCCLEARY

MERCY HOSPITAL STAFF
SURGICAL DIVISION

ALEXIUS McGLANNAN, A.M., M.D.
 W. D. WISE, M.D.
 C. F. BLAKE, M.D.

ELLIOTT HUTCHINS, M.D.
 A. M. EVANS, M.D.
 F. L. JENNINGS, M.D.

Associate Surgeons

R. H. LOCHER, M.D.
 T. R. CHAMBERS, M.D.
 I. O. RIDGLEY, M.D.

N. C. MARVEL, M.D.
 D. J. PESSAGNO, M.D.

Assistant Surgeons

CHARLES MANSON, M.D.
 A. B. McELWAIN, M.D.
 T. J. TOUHEY, M.D.

DWIGHT MOHR, M.D.
 H. F. BONGARDT, M.D.
 J. W. NELSON, M.D.

Ophthalmologists and Otologists

HARRY FRIEDENWALD, M.D.

Associates

H. K. FLECK, M.D.

J. W. DOWNEY, M.D.

Rhinologists and Laryngologists

FRANK D. SANGER, M.D.
 W. F. ZINN, M.D.

GEORGE W. MITCHELL, M.D.
 RAYMOND MCKENZIE, M.D.

Associates

F. A. PACIENZA, M.D.

Proctologist

CHARLES F. BLAKE, M.D.

Orthopaedic Surgeon

ALBERTUS COTTON, M.D.

Associate

H. L. ROGERS, M.D.

Urologist

ALEXANDER J. GILLIS, M.D.

Assistant

KENNETH B. LEGGEE, M.D.

Dentists

JOHN FREDERICK, D.D.S.

J. D. FUSCO, D.D.S.

MEDICAL DIVISION

Physicians

MAURICE C. PINCOFFS, M.D.

STANDISH MCCLEARY, M.D.

CARY B. GAMBLE, M.D.

HARVEY G. BECK, M.D.

Associates

HUBERT C. KNAPP, M.D.

C. C. W. JUDD, M.D.

H. R. PETERS, M.D.

BARTUS T. BAGGOTT, M.D.

GEORGE MCLEAN, M.D.

A. A. SUSSMAN, M.D.

L. A. M. KRAUSE, M.D.

JOHN E. LEGGEE, M.D.

Assistant Physicians

WETTERBEE FORT, M.D.

J. S. EASTLAND, M.D.

J. M. MILLER, M.D.

S. A. TUMMINELLO, M.D.

Gastro-Enterologist

JULIUS FRIEDENWALD, M.D.

Associates

T. FREDERICK LEITZ, M.D.

THEODORE MORRISON, M.D.

Assistants

MAURICE FELDMAN, M.D.

JOSEPH SINDLER, M.D.

Pediatricians

JOHN RUHRAH, M.D.

EDGAR B. FRIEDENWALD, M.D.

Associate Pediatrician

F. B. SMITH, M.D.

Assistant Pediatrician

W. F. SCHMITZ, M.D.

Neurologist and Psychiatrist

ANDREW C. GILLIS, M.D.

Associate

MILFORD LEVY, M.D.

Dermatologist

MELVIN ROSENTHAL, M.D.

OBSTETRICAL DIVISION

CHARLES E. BRACK, M.D.
 A. SAMUELS, M.D.
 W. S. GARDNER, M.D.
 G. A. STRAUSS, M.D.

E. P. SMITH, M.D.
 J. J. ERWIN, M.D.
 T. K. GALVIN, M.D.
 E. S. EDLAVITCH, M.D.

GYNECOLOGICAL DIVISION

Gynecologists

WILLIAM S. GARDNER, M.D.
 GEORGE A. STRAUSS, M.D.
 E. P. SMITH, M.D.
 ABRAHAM SAMUELS, M.D.
 T. K. GALVIN, M.D.

Associate

J. J. ERWIN, M.D.

Assistant

E. S. EDLAVITCH, M.D.

PATHOLOGICAL DIVISION

STANDISH McCLEARY, M.D.

HUGH R. SPENCER, M.D.

Clinical Pathologists

H. R. PETERS, M.D.

H. T. COLLENBERG

EMIL G. SCHMIDT, Ph.D.

Technicians

SISTER M. JOAN, Ph.G., R.N.

ANNA CHENOWETH, R.N.

FRANCIS DONOVAN, R.N.

X-RAY DEPARTMENT

Radiographers

ALBERTUS COTTON, M.D.

HARRY L. ROGERS, M.D.

K. W. GOLLEY, M.D.

Technician—SISTER M. ANTONIA, R.N.

MERCY HOSPITAL RESIDENT STAFF

Resident Surgeon

JULIUS J. LEYKO, M.D.

Assistant Resident Surgeons

SIMON BRAGER, M.D.

WILLIAM N. McFAUL, JR., M.D.

BENJAMIN S. RICH, M.D.

Resident Physician

DAVID TENNER, M.D.

Assistant Resident Physician

Resident Gynecologist

E. EUGENE COVINGTON, M.D.

Internes

EARL L. CHAMBERS, M.D.

FRED L. DEBARBIERI, M.D.

SASCHA F. GUIGLIA, M.D.

JOSEPH T. McANDREW, M.D.

ISRAEL P. MERANSKI, M.D.

JOHN E. MURPHY, M.D.

ISADORE NEISTADT, M.D.

ELDRED ROBERTS, M.D.

O. WALTER SPURRIER, M.D.

C. C. STEVENSON, M.D.

DISPENSARY STAFF OF MERCY HOSPITAL

Surgery Supervisors

A. M. EVANS, M.D.

N. C. MARVEL, M.D.

H. F. BONGARDT, M.D.

Attending Surgeons

D. H. MOHR, M.D.

H. F. BONGARDT, M.D.

I. O. RIDGLEY, M.D.

T. J. TOUHEY, M.D.

JOHN O'CONNOR, M.D.

J. W. NELSON, M.D.

Genito-Urinary Surgery

A. J. GILLIS, M.D.

K. B. LEGGE, M.D.

Orthopaedic Surgery

ALBERTUS COTTON, M.D.

HARRY L. ROGERS, M.D.

I. H. MASERITZ, M.D.

Medicine Supervisor

M. C. PINCOFFS, M.D.

*Attending Physicians*A. A. SUSSMAN, M.D., *Chief of Clinic*

J. M. MILLER, M.D.

S. SNYDER, M.D.

S. A. TUMMINELLO, M.D.

*Cardiovascular Diseases*A. A. SUSSMAN, M.D., *Chief of Clinic**Diseases of the Lungs*S. SNYDER, M.D., *Chief of Clinic**Diseases of Metabolism*J. S. EASTLAND, M.D., *Chief of Clinic**Allergic Diseases*H. M. BUBERT, M.D., *Chief of Clinic*

S. SNYDER, M.D.

Diseases of Stomach

Supervisor, JULIUS FRIEDENWALD, M.D.

Attending Physicians

T. FREDERICK LEITZ, M.D.

JOSEPH SINDLER, M.D.

M. FELDMAN, M.D.

I. I. LEVY, M.D.

THEODORE H. MORRISON, M.D.

Esophagoscopist

W. F. ZINN, M.D.

Nervous Diseases

Supervisor, A. C. GILLIS, M.D.

Attending Physicians

MILFORD LEVY, M.D.

ROBERT HODES, M.D.

Pediatrics

Supervisor, EDGAR B. FRIEDENWALD, M.D.

Attending Physician, W. J. SCHMITZ, M.D.

*Diseases of Women**Supervisors*

W. S. GARDNER, M.D.

A. SAMUELS, M.D.

Attending Surgeons

E. P. SMITH, M.D.

T. K. GALVIN, M.D.

J. J. ERWIN, M.D.

C. F. J. COUGHLIN, M.D.

E. EDLAVITCH, M.D.

Diseases of Nose and Throat

W. F. ZINN, M.D.

R. F. MCKENZIE, M.D.

F. A. PACIENZA, M.D.

LOUIS SMALL, M.D.

B. MCGOWAN, M.D.

Diseases of Eye and Ear

H. F. FLECK, M.D.

M. RASKIN, M.D.

J. I. KEMLER, M.D.

F. A. PACIENZA, M.D.

BERNARD WESS, M. D.

Dermatology

MELVIN ROSENTHAL, M.D.

Social Service Department

SISTER M. HELEN, R.N.

VIRGINIA JUDGE

MERCY HOSPITAL DISPENSARY

	OLD	NEW	TOTAL
Surgical	2,411	903	3,314
Medical	1,932	1,113	3,045
Gynecological	718	334	1,052
Eye and Ear	562	364	926
Nose and Throat.....	513	526	1,039
Neurological	388	117	505
Children	353	256	609
Gastro-Intestinal	503	108	611
Dental	81	70	151
Rectal	117	41	158
Orthopaedic	662	233	895
Skin	536	205	741
Genito-Urinary	3,833	596	4,429
Roentgenology			377
Total	12,609	4,866	17852

OTHER CLINICAL FACILITIES

THE BALTIMORE CITY HOSPITALS

The clinical advantages of the University have been largely increased by the liberal decision of the Board of Supervisors of City Charities to allow the immense material of these hospitals to be used for the purpose of medical education. There are daily visits and clinics in medicine and surgery by the Staff of the Hospitals. The autopsy material is unsurpassed in this country in amount, thoroughness in study, and the use made of it in medical teaching.

The Baltimore City Hospitals consist of the following separate hospitals:

The General Hospital, 160 beds.

The Hospital for Chronic Cases, 180 beds.

The Hospital for Tuberculosis, 190 beds.

The Detention Hospital for Insane, 450 beds.

STAFF OF THE BALTIMORE CITY HOSPITALS

VISITING STAFF

THOMAS R. BOGGS, S.B., M.D., *Physician-in-Chief.*

ARTHUR M. SHIPLEY, Sc.D., M.D., *Surgeon-in-Chief.*

C. C. HABLSTON, M.D., *Physician-in-Chief to the Tuberculosis Hospital.*

HARRY GOLDSMITH, M.D., *Physician-in-Charge of the Detention Hospital for the Insane.*

WILEY D. FORBUS, A.B., M.D., *Visiting Pathologist.*

GEORGE H. RUMSBURG, M.D., *Resident Pathologist.*

CONSULTING STAFF

Otologist

WILLIAM TARUN, M.D.,

Gynecologists

R. G. WILLSE, M.D.

J. MASON HUNDLEY, JR., M.A., M.D.

Urologist

W. H. TOULSON, A.B., M.D.

Laryngologists

H. R. SLACK, M.D.

FRANKLIN B. ANDERSON, M.D.

Pediatrician

JOHN RUHRAH, M.D.

Neurologist

OLIVER SMITH, A.B., M.D.

Psychiatrists

HENRY J. BERKLEY, M.D.

ADOLPH MEYER, M.D.

Orthopaedist

H. L. WHEELER, M.D.

Proctologist

G. MILTON LINTHICUM, A.B., M.D.

Assisting Visiting Physician

CHARLES R. AUSTRIAN, M.D.

Assistant Visiting Surgeons

FRANK S. LYNN, M.D.

C. A. REIFSCHNEIDER, M.D.

E. M. HANBAHAN, A.B., M.D.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL
OF MARYLAND FOR CRIPPLED CHILDREN

This institution contains 62 beds for the active treatment of orthopaedic conditions. A new modern hospital building has just been constructed with every facility for operating and physiotherapy for bone and joint cases. It is situated just within the northwestern city limits on a large estate of 75 acres at Hillsdale.

The hospital has endowed beds, private beds and beds supported by the city and state. The location is ideal for the treatment of bone and joint conditions of all characters in children having all the advantages of country air and sunshine, together with easy access from the city.

A dispensary at the University Hospital is maintained for the cases which are discharged from the hospital. It is, in fact, the Children's Orthopaedic Dispensary at the University of Maryland and the close affiliation is maintained for teaching purposes as well as clinical care of the patients. The physiotherapy department is very well equipped with modern apparatus and trained personnel.

STAFF

Surgeon-in-Chief and Medical Director

ROBERT W. JOHNSON, JR., A.B., M.D.

Attending Orthopaedic Surgeon

ALBERTUS COTTON, A.M., M.D.

Associate Orthopaedic Surgeons

MOSES GELLMAN, B.S., M.D.

HARRY L. ROGERS, M.D.

CLEMENT R. MONROE, M.D.

W. A. SIMPSON, A.B., M.D.

Consulting Surgeons

J. M. T. FINNEY, A.B., M.D., D.S.M., F.R.C.S. (Eng. Ire.) Hon.

ARTHUR M. SHIPLEY, Sc.D., M.D.

Plastic Surgeon

JOHN STAIGE DAVIS, B.Sc., M.D.

Neuro-Surgeon

CHARLES BAGLEY, JR., A.B., M.D.

Consulting Oculist and Aurist

HIRAM WOODS, A.B., M.D., LL.D.

Oculist and Aurist

WILLIAM TARUN, M.D.

Laryngologist

EDWARD A. LOOPER, M.D.

Assistant Laryngologists

F. B. ANDERSON, M.D.

ALLEN HOLDEN, M.D.

EVERETT L. BISHOP, M.D.

MARSHALL P. BYERLY, M.D.

Dentists

J. B. BELL, D.D.S.

C. MERLE DIXON, JR., D.D.S.

Consulting Physicians

LEWELLYS F. BARKER, A.B., M.D.

THOMAS R. BROWN, A.B., M.D.

THOMAS B. FUTCHER, A.B., M.D.

WILLIAM S. THAYER, A.B., M.D.

Pediatricist

BENJAMIN TAPPAN, A.B., M.D.

Dermatologist

JOHN R. ABERCROMBIE, A.B., M.D.

Pathologist

SYDNEY M. CONE, A.B., M.D.

Attending Pathologist

HOWARD J. MALDEIS, M.D.

Neurologist

IRVING J. SPEAR, M.D.

Head Nurse

MISS GRACE LOVELL ELGIN, R.N.

Dispensary and Social Service Nurse

MISS MABEL S. BROWN, R.N.

Physiotherapists, Masseuses and Instructors in Corrective Gymnastics

MISS ANITA RENSHAW PRESSTMAN

MRS. GEORGIANA WISONG

MISS ELIZABETH EMORY

MISS FLORENCE GRAPE

Röntgenologists

ALBERTUS COTTON, A.M., M.D.

HENRY J. WALTON, M.D.

MRS. GEORGIANA WISONG

*Instructors in Grammar School*MISS MARY H. LEE, *Principal*MISS MARY SAMPSON, *Assistant**Superintendent and Business Manager*

MRS. M. E. LANE

ST. VINCENT'S INFANT ASYLUM

The facilities of this institution, containing 250 infants and children, have been kindly extended to the University of Maryland by the Sisters of Charity. This large clinic enables this school to present to its students liberal opportunities for the study of diseases of infants and children.

STAFF

Obstetrician

DR. L. H. DOUGLASS

*Pediatricians*DR. W. C. BACON
DR. C. R. GOLDSBOROUGHDR. W. H. INGRAM
DR. C. L. JOSLIN*Surgeon*

DR. N. WINSLOW

Dermatologist

DR. J. A. BUCHNESS

Oculists

DR. C. A. CLAPP

DR. F. B. ANDERSON

Orthopaedic Surgeon

DR. W. H. DANIELS

Physician

DR. C. P. CLAUTICE

Epidemiologist

DR. M. E. BALLARD

LIBRARIES

The University Library, founded in 1813 by the purchase of the collection of Dr. John Crawford, now contains 29,659 volumes, a file of 76 current (medical) journals, and several thousand pamphlets and reprints. It is well stocked with recent literature, including books and periodicals of general interest. The home of the Library is Davidge Hall, a comfortable and commodious building in close proximity to the classrooms and the Laboratories of the Medical Department. The Library is open daily during the year, except in August, for use of members of the Faculty, the students, and the profession generally.

The Library of the Medical and Chirurgical Faculty of Maryland, containing 60,000 volumes, is open to the students of the school. The leading medical publications of the world are received by the Library, and complete sets of many journals are available. Other Libraries of Baltimore are the Peabody (215,355 volumes) and the Enoch Pratt Free Library (576,500 volumes).

All these Libraries are open to the students of the school without charge.

ORGANIZATION OF THE CURRICULUM

The following curriculum is the result of a thorough revision of teaching in this school in order to meet modern requirements. The multiplication of specialties in medicine and surgery necessitates a very crowded course and the introduction of electives will very soon be depended on to solve some of the difficulties.

The curriculum is organized under eleven departments:

1. Anatomy (including Histology and Embryology).
2. Physiology.
3. Bacteriology and Immunology.
4. Biological Chemistry.
5. Pharmacology and Materia Medica.
6. Pathology.
7. Medicine (including Medical Specialties).
8. Surgery (including Surgical Specialties).
9. Obstetrics.
10. Gynecology.
11. Ophthalmology and Otology.

The instruction is given in four years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures and functions of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in Medicine and Surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insures attention to the needs of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

DEPARTMENT OF ANATOMY, INCLUDING HISTOLOGY AND EMBRYOLOGY

C. L. DAVIS, M.D.....	Professor of Anatomy
EDUARD UHLENHUTH, Ph.D.....	Associate Professor of Anatomy
JOHN F. LUTZ, M.D.....	Instructor in Histology
FRANK H. FIGGE, B.S.....	Assistant in Anatomy
THOMAS B. AYCOCK, M.D.....	Assistant in Anatomy
MONTE EDWARDS, M.D.....	Assistant in Anatomy
JOSEPH POKORNY, M.D.....	Assistant in Histology
J. HULLA, M.D.....	Assistant in Histology
R. W. JOHNSON, M.D.....	Assistant in Histology

GROSS ANATOMY. *First Year.* Four to five hours every day for approximately 20 weeks. The entire course centers around the dissection of the human body. Each student is given opportunity to dissect an entire half (left or right) of the body. The dissection is supplemented by lectures and informal discussions.

Anatomy is taught as an independent science, emphasis being laid on the human species as contrasted to animal morphology. An attempt is made to familiarize the student with the elements of anthropometry, with systematic and regional anatomy, with the principles of topographical anatomy and with osteology.

The actual dissection is preceded by a general examination of the body surface and superficial organs. Opportunity is provided for taking representative measurements of the head, face, trunk and limbs and of acquiring a knowledge of using anthropometric instruments. Throughout the dissection the student is encouraged to take measurements and weights of all the major organs, including the brain and the endocrine organs, and to obtain a knowledge of the proportions of each organ to the body as a whole as well as to the variability of these proportions.

The dissection is undertaken in relation to topographical regions of the body, but systematic relations are continuously emphasized and, wherever possible, brought out by actual dissection.

Osteology is taught in conjunction with the dissection of the muscles and the study of the functional mechanism of the skeleto-muscular apparatus. Each student is provided with a set of bones to aid him in his homework. A charge of \$6 is made for each set, \$4 of which is returned at the end of the year, while the remaining \$2 are used for the upkeep of old and the purchase of new skeletal

material. Fifty complete and perfect skeletons of the whole body and about as many of the limbs are available for reference and special advanced work.

At the end of the course the entire work is reviewed in a series of lectures presenting the entire anatomical basis of the most representative physiological activities, such as respiration, secretion, digestion, endocrine activity, parturition, etc.

Second, Third and Fourth Years. Opportunity is provided for advanced special dissections and for research work in every branch of anatomy. Dr. Eduard Uhlenhuth.

Histology and Embryology

First Year. Lectures, recitations and laboratory work, twelve hours each week for sixteen weeks. Histology and embryology are taught as a common subject, the histogenesis of a part preceding its histological study.

The most important part of the work will be done in the laboratory, where each student will be provided with apparatus, staining fluids and material necessary for the preparation of specimens for microscopical examination. An important aid to the course is the projection microscope and balopticon which are used for the projection upon a screen of magnified images of the specimens actually used in the laboratory, and of illustrations from standard textbooks.

Each student is provided with a loan collection of histological slides, for which a deposit of \$10 is required. This deposit is refunded upon the return of the slides in a satisfactory condition. Dr. C. L. Davis and Dr. J. F. Lutz.

Neuro Anatomy

During the second semester 36 hours are devoted to an elementary course in Neuro Anatomy. The human brain is dissected and microscopical sections of representative levels of the brain stem studied. Laboratory talks and lantern slide demonstration supplement the students work, the entire course being based on an effort to familiarize the student with the structure of the central nervous system as applied to its physiology. Dr. Carl L. Davis.

DEPARTMENT OF PHYSIOLOGY

FERDINAND A. RIES, M.D.....Associate Professor of Physiology
 CHARLES C. CONSER, M.D.....Associate Professor of Physiology
 O. G. HARNE, A.B.....Associate in Physiology

First Year. Lectures, laboratory and recitations in physiology are given the last eight weeks of the first year. The physiology of the muscle and nerve, of the central nervous system and of digestion and secretion is taken up in lectures and laboratory.

Second Year. A continuation of the first year course. The work consists of lectures and laboratory work on blood, circulation, internal secretions, special senses, respiration and metabolism.

SUMMARY

	First Year	Second Year
Lectures and recitation.....	37 hours	72 hours
Laboratory	64 hours	87 hours
Total	101 hours	159 hours

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

FRANK W. HACHTEL, M.D.....Professor of Bacteriology
 WILLIAM ROYAL STOKES, M.D., Sc.D.....Professor of Bacteriology
 J. A. F. PFEIFFER, M.D.....Instructor in Bacteriology
 HENRY F. BUETTNER, M.D.....Instructor in Bacteriology
 H. E. LEVIN, M.D.....Assistant in Bacteriology

Instruction in bacteriology is given in the laboratory to the students of the second year during the first semester. This includes the various methods of preparation and sterilization of culture media, the study of pathogenic bacteria and the bacteriological examination of water and milk. The bacteriological diagnosis of the communicable diseases is also included in this course. Animal inoculations are made in connection with the bacteria studied. The most important protozoa are also studied in the laboratory. The principles of general bacteriology are taught by quiz, conference and lecture.

The principles of immunology are presented by means of quizzes, conferences and lectures to the second-year class throughout the second semester, and practical experiments are carried out by the class in laboratory sessions of three hours each, held four days a week for eight weeks.

DEPARTMENT OF BIOLOGICAL CHEMISTRY

H. BOYD WYLIE, M.D.....	Professor of Biological Chemistry
FRANK N. OGDEN, M.D.....	Associate in Biological Chemistry
EMIL G. SCHMIDT, Ph. D.....	Associate in Biological Chemistry
RUTH F. CARR, B.S.....	Assistant in Biological Chemistry
Lectures	76 hours,
Conferences	20 hours,
Laboratory	120 hours.

This course is designed to present the fundamental concepts of Biological Chemistry. The principal constituents and the phenomena of living matter are discussed in the lectures and studied in the laboratory. Training is afforded in routine biochemical methods of investigation.

PHARMACOLOGY AND MATERIA MEDICA

WILLIAM HENRY SCHULTZ, Ph.B., Ph.D.....	Professor of Pharmacology
JOHN M. HAYNES, B.A., M.A.....	Instructor in Pharmacology
RUTH MUSSER, B.A.....	Instructor in Pharmacology
WILLIAM GLENN HARNE.....	Demonstrator in Pharmacology

1. MATERIA MEDICA AND PHARMACOLOGY. Fifty-six hours required.

The prerequisites to this and the following courses in pharmacology are college chemistry, pharmaceutical and biological chemistry. Special courses in physical and colloidal chemistry are highly recommended.

2. SYSTEMATIC PHARMACOLOGY. Ninety-six hours required. Second year. In this portion of the course the student is taught Pharmacology as a pure science. The aim is to attain a mean between that which has a purely scientific bearing and that dominantly practical, so that both a critical attitude toward drugs and an understanding of the principles of dosage may be acquired. This is ac-

complished by lectures, quizzes, conferences and the following course of laboratory exercises.

3. PHARMACODYNAMICS. Ninety-six hours. Second Year. This laboratory course runs parallel with Pharmacology 2.

In the first part of the course the experiments are upon normal animals (anaesthetised). Special emphasis is laid upon technic and upon the student's ability to record and properly analyze the results.

The second half of the course partakes more of the character of experimental medicine. Pathological animals are treated with chemotherapeutic agents and the toxicity of the drug for the host and for the parasite are studied. Students who by this time have demonstrated ability and initiative are encouraged to do intensive work along lines of special interest.

4. PHARMACOLOGY OF GENERAL AND LOCAL ANESTHETICS AND SOPORIFICS. Four weeks, three lectures, three laboratory periods a week. This is a special course designed to meet the needs of physician and graduate nurse who wish to acquire a knowledge of the more recent developments in the pharmacology of depressant and sleep-producing drugs. The course is so arranged that those properly qualified may continue the work under expert anesthetists in the wards of the hospitals connected with the university. Professor Schultz.

5. RESEARCH IN PHARMACOLOGY AND CHEMO-THERAPY. Properly qualified students are admitted to the laboratory with a view to their carrying on original investigations in drug action. Thoroughly equipped laboratories are well adapted for post-graduate study and research in Pharmacology. Hours will be arranged to suit the applicant. Professor Schultz.

DEPARTMENT OF PATHOLOGY

HUGH R. SPENCER, M.D.....	Professor of Pathology
STANDISH MCCLEARY, M.D.....	Professor of Pathology
SYDNEY M. CONE, M.D.....	Associate Professor of Pathology
ROBERT B. WRIGHT, M.D.....	Assistant Professor of Pathology
ALBERT E. GOLDSTEIN, M.D.....	Associate in Pathology
WALTER C. MERKLE, M.D.....	Associate in Pathology
M. ALEXANDER NOVEY, M.D.....	Instructor in Pathology
WM. S. LOVE, M.D.....	Instructor in Pathology

A. A. SUSSMAN, M.D.....	Instructor in Pathology
HOWARD M. BUBERT, M.D.....	Instructor in Pathology
LEON FREEDOM, M.D.....	Instructor in Pathology
M. H. GOODMAN, M.D.....	Instructor in Pathology
C. GORDON WARNER, A.B., M.D.,.....	Instructor in Pathology
BENJAMIN ABESHOUSE, M.D.....	Instructor in Pathology
GEORGE H. RUMBERG, M.D.....	Assistant in Pathology
W. R. JOHNSON, M.D.....	Assistant in Pathology

Courses of instruction in Pathology are given during the second and third years. These courses are based on previous study of normal structure and function and aim to outline the natural history of disease. Instruction is made as practical as possible that the student may become familiar with the appearance of tissues in disease and may be able to correlate anatomical lesions with clinical symptoms and signs.

1. GENERAL PATHOLOGY AND HISTO-PATHOLOGY. This course is given to second year students. It includes the study and demonstration of disturbances of the body fluids, disturbances of structure, nutrition and metabolism of cells, disturbances of fat, carbohydrate and protein metabolism, disturbances in pigment metabolism, inflammation and tumors. Appropriate sections and gross material are studied in the laboratory.

2. APPLIED PATHOLOGY, INCLUDING GROSS MORBID ANATOMY AND MORBID PHYSIOLOGY. *Third-year Students.* In this course the special relationship of the gross and microscopical lesions to clinical symptoms and signs is emphasized. Fresh material from autopsy collected at the various hospitals is demonstrated and supplemented by a study of the respective autopsy protocols.

3. AUTOPSIES. *Third Year.* Autopsy technique is taught to small groups of students by special instruction at autopsies performed at the various hospitals. Students are required to assist at the autopsy, study the organs, examine the microscopical sections, make cultures and prepare autopsy protocols.

4. CLINICAL PATHOLOGY CONFERENCE. *Fourth Year.* In collaboration with the Department of Medicine. Material from autopsies is studied with reference to the correlation of the clinical aspects with the pathological findings.

5. ADVANCED WORK IN PATHOLOGY. Properly qualified students will be permitted to carry out advanced or research work along the lines of experimental pathology.

DEPARTMENT OF MEDICINE

MAURICE C. PINCOFFS, B.S., M.D.....	Professor of Medicine
GORDON WILSON, M.D.....	Professor of Medicine
STANDISH McCLEARY, M.D.....	Professor of Pathology and Clinical Medicine
JOS. E. GICHNER, M.D.,	Professor of Clinical Medicine and Physical Therapeutics
G. CARROLL LOCKARD, M.D.....	Professor of Clinical Medicine
HARVEY G. BECK, Sc.D., M.D.....	Professor of Clinical Medicine
PAUL W. CLOUGH, B.S., M.D.....	Associate Professor of Medicine
C. C. W. JUDD, A.B., M.D.....	Associate Professor of Medicine
SYDNEY R. MILLER, M.D.....	Associate Professor of Medicine
WALTER A. BAETJER, A.B., M.D.....	Associate Professor of Medicine
HARRY M. STEIN, M.D.....	Associate Professor of Medicine
WM. H. SMITH, M.D.....	Associate Professor of Clinical Medicine
H. J. MALDEIS, M.D.....	Associate Professor of Medical Jurisprudence
S. LLOYD JOHNSON, M.D.....	Assistant Professor of Medicine
JOHN G. HUCK, M.D.....	Assistant Professor of Medicine
GEORGE McLEAN, M.D.....	Assistant Professor of Medicine
C. C. HABLSTON, M.D.....	Assistant Professor of Medicine
L. A. M. KRAUSE, M.D.....	Assistant Professor of Medicine
H. R. PETERS, M.D.....	Assistant Professor of Medicine
H. M. BUBERT, M.D.....	Associate in Medicine
W. S. LOVE, JR., A.B., M.D.....	Associate in Medicine
A. A. SUSSMAN, M.D.....	Associate in Medicine
WILLIAM MICHEL, M.D.....	Instructor in Medicine
M. G. GICHNER, M.D.....	Instructor in Medicine
WILLIAM A. STRAUSS, M.D.....	Instructor in Medicine
HENRY SHEPPARD, M.D.....	Instructor in Medicine
WETHERBEE FORT, M.D.....	Instructor in Medicine
J. S. EASTLAND, M.D.	Instructor in Medicine
R. HOOPER SMITH, M.D.....	Assistant in Medicine
W. H. WOODY, M.D.....	Assistant in Medicine
THOMAS C. WOLFE, M.D.....	Assistant in Medicine
HENRY C. SMITH, M.D.....	Assistant in Medicine
NATHANIEL BECK, M.D.....	Assistant in Medicine
CARL BENSON, M.D.....	Assistant in Medicine
F. S. WAESCHE, M.D.....	Assistant in Medicine
A. SCAGNETTI, M.D.....	Assistant in Medicine
DAVID TENNER, M.D.....	Assistant in Medicine

GENERAL OUTLINE

SECOND YEAR

Introduction to clinical medicine.

- (a) Introductory physical diagnosis.
(1 hour a week, first semester.)
(2 hours a week, second semester.)
- (b) Medical clinics.
(1 hour a week, second semester.)

THIRD YEAR

I. The methods of examination (13 hours a week).

- (a) History taking.
- (b) Physical diagnosis.
- (c) Clinical pathology.

These subjects are taught and practiced in the out-patient department and in the clinical laboratory.

II. The principles of medicine (7 hours a week).

- (a) Lectures, clinics and demonstrations in general medicine, neurology, pediatrics and preventive medicine.

III. The principles of therapeutics (2 hours a week).

Lectures and demonstrations in general therapeutics, physical therapeutics and materia medica.

FOURTH YEAR

The practice of medicine.

I. Clinical clerkship on the medical wards.

(26 hours a week for ten weeks.)

- (a) Responsibility, under supervision, for the history, physical examination, laboratory examination and progress notes of assigned cases.
- (b) Ward classes in general medicine, the medical specialties, and therapeutics.

II. Clinics in general medicine and the medical specialties.

(6 hours a week.)

III. Dispensary work in the medical specialties.

IV. Clinical pathological conferences (1 hour a week.)

Medical Dispensary Work

The medical dispensaries of both the Mercy and the University Hospitals are utilized for teaching in the third year. Each student spends two periods a week of two hours each in dispensary work.

The work is done in groups of four to six students under an instructor. Systematic history-taking is especially stressed. Physical findings are demonstrated. The student becomes familiar with the commoner acute and chronic disease processes.

Physical Diagnosis

Second Year. Didactic lectures and practical demonstrations in topographical anatomy and normal physical signs.

Third Year. The class is divided into small groups, and each section receives instruction for four hours a week for the entire session in the medical dispensaries of the hospitals. The large clinical material of the dispensaries and hospitals is utilized to give each student the opportunity to familiarize himself with the common types of bodily structure, with the normal variations in physical signs and with the physical signs of the chief pulmonary, circulatory and abdominal diseases.

Therapeutics

Third Year. General therapeutics and materia medica are taken up and an effort is made to familiarize the student with the practical treatment of disease. The special therapy of the chief diseases is then reviewed. Two hours a week. Dr. Lockard.

The principles of physical therapy are taught in a special lecture and demonstration course consisting of six one-hour periods. Dr. Gichner.

Fourth Year. Special consideration is given to the practical application of therapeutic principles in bedside teaching and the chief therapeutic methods are demonstrated.

Tuberculosis

During the third year in connection with the instruction in physical diagnosis a practical course is given weekly to sections of the class at the Municipal Tuberculosis Hospital. Stress is laid upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

Syphilis

Third Year. During the third year the subject of syphilis will be dealt with in the lecture course.

Fourth Year. An elective course in the therapeutic management of syphilis will be offered in the dispensary.

CLINICAL PATHOLOGY

JOHN G. HUCK, M.D.....	Assistant Professor of Medicine Head of Department of Clinical Pathology
H. J. MALDEIS, M.D.....	Associate Professor of Medical Jurisprudence
M. G. GICHNER, M.D.....	Instructor in Medicine
WILLIAM A. STRAUSS, M.D.....	Instructor in Medicine
R. HOOPER SMITH, M.D.....	Assistant in Medicine

During the third year the student is thoroughly drilled in the technique of the usual clinical laboratory work, so that he is able to perform all routine examination which may be called for during his fourth year, in connection with the work in the wards and dispensary.

The practical work is supplemented by a series of didactic lectures and demonstrations in which the entire teaching staff of the department takes an active part. The microscopical and chemical study of blood, exudates and transudates, gastric juice, spinal fluid, feces and urine are successively taken up, and special attention directed to the clinical significance of the findings.

Clinical parasitology from the standpoint of the infecting agent and the carrier is given careful consideration.

The entire course is thoroughly practical. Each student has his own microscope and is provided with blood counters and hemoglobinometer for his exclusive use, and every two students with a special laboratory outfit for all routine purposes.

During the fourth year the student applies what he has learned during the preceding year in the laboratories of the various affiliated hospitals. He is also supplied with a laboratory outfit which is sufficiently complete to enable him to work independently of the general equipment. Special instructors are available during certain hours to give necessary assistance and advice.

GASTRO-ENTEROLOGY

JULIUS FRIEDENWALD, A.M., M.D.....	Professor of Gastro-Enterology
T. FRED LEITZ, M.D.....	Clinical Professor of Gastro-Enterology
J. HARRY ULLRICH, M.D.....	Associate Professor of Gastro-Enterology
THEODORE H. MORRISON, M.D.....	Associate Professor of Gastro-Enterology
MAURICE FELDMAN, M.D.....	Assistant Professor of Gastro-Enterology
ZACHARIAH MORGAN, M.D.....	Associate in Gastro-Enterology
JOSEPH SINDLER, M.D.....	Associate in Gastro-Enterology
M. S. KOPPELMAN, M.D.....	Instructor in Gastro-Enterology
N. J. DAVIDOV, M.D.....	Instructor in Gastro-Enterology
ISIDORE I. LEVY, M.D.....	Instructor in Gastro-Enterology
C. VANCE HOOPER, M.D.....	Assistant in Gastro-Enterology
AUBREY C. SMOOT, M.D.....	Assistant in Gastro-Enterology

Fourth Year. Clinics, recitations and demonstrations to the class for one hour a week throughout the session. Dispensary instruction to small groups throughout the entire session. Practical instruction in the differential and clinical diagnosis and demonstrations of the newer methods of diagnosis in gastro-intestinal affections.

PSYCHIATRY

R. M. CHAPMAN, M.D.....	Professor of Psychiatry
H. S. SULLIVAN, M.D.....	Associate Professor of Psychiatry
LEWIS B. HILL, M.D.....	Associate in Psychiatry
HARRY GOLDSMITH, M.D.....	Instructor in Psychiatry

Third Year. In the third year the student attends fifteen clinical lectures and five clinics which are designed to be introductory to the more intensive work in psychiatry in the fourth year.

Fourth Year. The class is divided into sections for clinical conferences on selected groups of cases. Each student may work for a short period as assistant in the Mental Hygiene Clinic, and thus gain practical experience of the problems of history-taking, examination, and the care of psychiatric patients.

PEDIATRICS

EDGAR B. FRIEDENWALD, M.D.....	Professor of Clinical Pediatrics
C. LORING JOSLIN, M.D.....	Professor of Clinical Pediatrics
JOHN H. TRABAND, M.D.....	Assistant Professor of Pediatrics
CLARENCE E. MACKE, M.D.....	Assistant Professor of Pediatrics
ALBERT JAFFE, M.D.....	Assistant Professor of Pediatrics
WILLIAM J. TODD, M.D.....	Associate in Pediatrics
WILLIAM G. GEYER, M.D.....	Associate in Pediatrics
CLEWELL HOWELL, M.D.....	Associate in Pediatrics
SAMUEL S. GLICK, M.D.....	Associate in Pediatrics
F. STRATNER OREM, M.D.....	Instructor in Pediatrics
FREDERICK B. DART, M.D.....	Instructor in Pediatrics
FREDERICK SMITH, M.D.....	Instructor in Pediatrics
R. M. HENING, M.D.....	Instructor in Pediatrics
MARIE KOVNER, M.D.....	Instructor in Pediatrics
M. N. PUTERMAN, M.D.....	Instructor in Pediatrics
A. H. FINKELSTEIN, M.D.....	Instructor in Pediatrics
T. TERRY BURGER, M.D.....	Instructor in Pediatrics
W. T. SCHMITZ, M.D.....	Assistant in Pediatrics
S. C. FELDMAN, M.D.....	Assistant in Pediatrics
M. PAUL BYERLY, M.D.	Assistant in Pediatrics
LOUIS T. LAVY, M.D.....	Assistant in Pediatrics
HENRY GINSBERG, M.D.....	Assistant in Pediatrics
WALTER B. JOHNSON, M.D.....	Assistant in Pediatrics

Third Year. Instruction during the third year consists of one lecture each week in which infant feeding and the most important diseases of infancy and childhood are especially emphasized. Drs. Joslin and Friedenwald.

Fourth Year. During this year a weekly clinical lecture is given where the character of disease is fully demonstrated and the students are afforded an opportunity for personal examination of all cases. In addition, ward classes are held weekly where bedside instruction is given. A section of the class also works daily at the Babies' and Children's Clinic. This clinic, which is under the direction of Dr. Joslin, has a yearly attendance of more than twenty thousand, and offers an excellent opportunity for study and observation of a wide variety of cases under competent instructors.

Instruction is also given on the Children's Ward at the Mercy Hospital.

NEUROLOGY

IRVING J. SPEAR, M.D.....	Professor of Neurology
ANDREW C. GILLIS, A.M., M.D., LL.D.....	Professor of Neurology
G. M. SETTLE, A.B., M.D.,	

Associate Professor of Neurology and Clinical Medicine

BENJAMIN PUSHKIN, M.D.....	Associate Professor of Clinical Neurology
MILFORD LEVY, M.D.....	Assistant Professor of Neurology
LEON FREEDOM, M.D.....	Associate in Neurology
ROBERT HODES, M.D.....	Instructor in Neurology

Third Year. Lectures and recitations one hour each week to the entire class. Instruction in clinical neurology two hours a week at the City Hospital to small groups. By means of didactic lectures and clinical conferences, there are considered the commoner types of diseases of the nervous system, the methods of neurological examination, and the relationship of signs and symptoms to pathological conditions. The material at the University and Mercy Hospitals is available.

Fourth Year. Clinical conference one hour each week to the entire class. This subject is taught at the University and Mercy Hospitals. All cases presented at these clinics are carefully examined; complete written records are made by the students who demonstrate the cases before the class. The cases are usually assigned one or two weeks before they are presented, and each student in the class must prepare one or more cases during the year.

WARD CLASS INSTRUCTION. In small sections at the University and Mercy Hospitals. In these classes the students come in close personal contact with the cases in the wards under the supervision of the instructor.

DISPENSARY INSTRUCTION. Small sections are instructed in the dispensaries of the University and Mercy Hospitals four afternoons each week. In this way students are brought into contact with nervous diseases in their earlier as well as later manifestations.

HYGIENE AND PREVENTIVE MEDICINE

C. HAMPSON JONES, M.D., C.M.....	Professor of Hygiene and Public Health
V. L. ELLICOTT, M.D.....	Instructor in Hygiene and Public Health
M. G. TULL, M.D.....	Instructor in Hygiene and Public Health

Third Year. Two lectures a week throughout the session. The lectures will encompass the fundamental subjects: air, water, soil, food, disposal of wastes, communicable diseases, state and federal public health laws, and industrial diseases. Small groups visit the Sydenham Hospital weekly and are given practical instruction in the diagnosis, treatment and isolation of the contagious diseases.

Fourth Year. Small groups visit the City Board of Health Laboratories for practical instruction in the laboratory, field and administrative aspects of public health work.

MEDICAL JURISPRUDENCE

H. J. MALDEIS, M.D.....Associate Professor of Medical Jurisprudence
Baltimore City Post Mortem Physician

Fourth Year. One hour each week for one semester.

Inasmuch as Medical Jurisprudence teaches the application of every branch of medical knowledge to the needs of the law, civil or criminal, this course embraces the following: Proceedings in criminal and civil prosecution; medical evidence and testimony; identity in its general relations; sexual abnormalities; personal identity; impotence and sterility; rape; criminal abortions; signs of death; wounds in their medico-legal relations; death, natural and homicidal; malpractice; insanity and medico-legal autopsies

DEPARTMENT OF SURGERY

ARTHUR M. SHIPLEY, Sc.D., M.D.....	Professor of Surgery
ALEXIUS MCGLANNAN, A.M., M.D.....	Professor of Surgery
NATHAN WINSLOW, A.M., M.D.....	Clinical Professor of Surgery
PAGE EDMUNDS, M.D.....	Clinical Professor of Industrial Surgery
WALTER D. WISE, M.D.....	Clinical Professor of Surgery
JOSEPH W. HOLLAND, M.D.....	Clinical Professor of Surgery
FRANK S. LYNN, M.D.....	Clinical Professor of Surgery
ELLIOTT H. HUTCHINS, A.M., M.D.....	Clinical Professor of Surgery
CHARLES REID EDWARDS, M.D.....	Clinical Professor of Surgery
THOMAS R. CHAMBERS, A.M., M.D.....	Associate Professor of Surgery
R. W. LOCHER, M.D.....	Associate Professor of Clinical Surgery
A. M. EVANS, M.D.....	Associate Professor of Surgery
F. L. JENNINGS, M.D.....	Associate Professor of Surgery
E. S. JOHNSON, M.D.....	Associate Professor of Surgery
E. H. HAYWARD, M.D.....	Associate in Surgery
C. A. REIFSCHNEIDER, M.D.....	Associate in Surgery
M. J. HANNA, M.D.....	Associate in Surgery
H. M. FOSTER, M.D.....	Associate in Surgery
D. J. PESSAGNO, M.D.....	Associate in Surgery
C. F. HORINE, M.D.....	Associate in Surgery
I. O. RIDGLEY, M.D.....	Instructor in Surgery
W. R. JOHNSON, M.D.....	Instructor in Surgery
E. M. HANRAHAN, A.B., M.D.....	Instructor in Surgery
H. F. BONGARDT, M.D.....	Instructor in Surgery
DWIGHT MOHR, M.D.....	Assistant in Surgery
WM. R. GERAGHTY, M.D.....	Assistant in Surgery
S. DEMARCO, M.D.....	Assistant in Surgery
CLYDE MARVEL, M.D.....	Assistant in Surgery
H. M. McELWAIN, M.D.....	Assistant in Surgery
J. G. ONNEN, M.D.....	Assistant in Surgery
A. V. BUCHNESS, M.D.....	Assistant in Surgery
KARL J. STEINMUELLER, A.B., M.D.....	Assistant in Surgery
THOMAS B. AYCOCK, A.B., M.D.....	Assistant in Surgery
ROBERT W. JOHNSON, M.D.....	Assistant in Surgery
S. H. CULVER, M.D.....	Assistant in Surgery
T. J. TOUHEY, M.D.....	Assistant in Surgery

The teaching is done in the Anatomical Laboratory and the dispensaries, wards, clinical laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and operating rooms of the Baltimore City Hospitals.

Instruction is given by means of lectures, recitations, dispensary work, bedside instruction, ward classes, and clinics. The work begins in the second year, and continues throughout the third and fourth years.

Second Year

TOPOGRAPHIC AND SURGICAL ANATOMY. The course is designed to bridge the gap between anatomy in the abstract, and clinical anatomy as applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory, and students are required to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected when necessary to bring out outlines and relations of structures.

DIDACTIC LECTURES. Two hours a week for one semester, augmented by demonstrations with specimens, charts, and cross section. Dr. Holland.

LABORATORY. Twelve hours a week for 8 weeks. Dr. Hanna, assisted by Dr. Johnson.

PRINCIPLES OF SURGERY. This course includes history-taking, records of physical examinations and of operations and progress notes; the preparation of surgical dressings, suture materials and solutions. It includes inflammation, infections, ulcers, gangrene, fistulae and sinuses, hemorrhage, shock and tumors; the use of splints, bed frames, bone plates, bone grafts, etc., local anaesthesia and the preparation of patients for operations. Lectures and conferences. Two hours per week for one semester to the entire class. Dr. Edwards.

Third Year

GENERAL AND REGIONAL SURGERY. Principles of surgery and general surgery, three hours a week throughout the year to the entire class, lectures, recitations and clinics. Drs. Shipley and Wise.

The class is divided into groups and receives instruction in history-taking, gross pathology, and surgical diagnosis—at the bedside and in the dead-house of the Baltimore City Hospitals. Drs. Shipley, Lynn, Reifschneider and Hanrahan.

OPERATIVE SURGERY. Instruction is given in operative surgery upon the cadaver and on dogs. The class is divided into sections, and each section is given practical and individual work under the supervision of the instructors. Dr. Lynn, assisted by Drs. Winslow, Hayward, E. S. Johnson, Foster, Geraghty, Demarco, Horine, Pes-

sagno, Onnen, W. R. Johnson Steinmueller, Sigrist, Culver and R. W. Johnson.

FRACTURES AND DISLOCATIONS. This course consists of instruction in the various forms of fractures, dislocations and their treatment. There is a regular schedule of didactic lectures, which is supplemented by practical demonstrations in diagnosis and treatment. This practical work is given at the Mercy, University and Baltimore City Hospitals. Drs. Lynn and Jennings.

SURGICAL DISPENSARY. Under supervision, the student takes the history, makes the physical examinations, attempts the diagnosis, and, as far as possible, carries out the treatment of the ambulatory surgical cases in the University and in the Mercy Hospitals. Mercy Hospital—Drs. Dwight Mohr, Ridgely, Touhey, Bongardt and McElwain. University Hospital—Drs. Holland, Lynn, Winslow, Edwards, E. S. Johnson and Foster.

Fourth Year

CLINICS. A weekly clinic will be given at the Mercy and at the University Hospitals to one-half the class throughout the year. As far as possible this is a diagnostic clinic. Mercy Hospital—Dr. McGlannan. University Hospital—Dr. Shipley.

SURGICAL PATHOLOGY. A weekly exercise of one hour at Mercy Hospital for one semester, at which specimens from the operating-room and museum are studied in the gross and microscopically, in relation with the case history. Dr. McGlannan.

INDUSTRIAL SURGERY. Operative and post-operative treatment of accident cases, with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. Edmunds.

CLINICAL CLERKSHIP. The personal study of assigned hospital patients, under supervision of the staffs of University and of Mercy Hospitals, history-taking, and physical examination of patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

WARD CLASSES. Ward class instruction in small groups will consist of ward rounds; surgical diagnosis, treatment and the after-care of operative cases. Mercy Hospital—Drs. McGlannan, Wise, Elliot Hutchins, Evans and Jennings. University Hospital—Drs. Shipley, Holland, Edmunds, Lynn and Edwards.

ANAESTHESIA

Second Year

Lectures on history of anaesthesia: Ancient and Modern. General physiology of anaesthesia. Special physiology of each anaesthetic agent. Different methods for producing general anaesthesia, with a detailed description of each. The selection of the anaesthetic and method best suited for its administration in particular cases. Difficulties and accidents during and following anaesthesia, their causes, prevention and control. Different methods of resuscitation. Blood pressure: Its significance and bearing on selection of the anaesthetic and use as a guide during anaesthesia.

Eight hours to the entire class. Drs. S. Griffith Davis and W. G. Queen.

Fourth Year

During the clinics and operations before small groups, each student will be required to observe the administration of anaesthetics and to keep a chart recording blood pressure, pulse and respiration under the direction of an instructor.

DERMATOLOGY

MELVIN ROSENTHAL, M.D.....	Professor of Dermatology
HARRY M. ROBINSON, M.D.....	Associate Professor of Dermatology
JOHN R. ABERCROMBIE, A.B., M.D.....	Associate in Dermatology
FRANCIS ELLIS, A.B., M.D.....	Instructor in Dermatology
A. C. MONNINGER, M.D.....	Assistant in Dermatology
M. H. GOODMAN, A.B., M.D.....	Assistant in Dermatology

Clinical conferences one hour each week to entire class. This course will consist of demonstrations of the common diseases of the skin.

Dispensary instruction, University Hospital, Mondays, Wednesdays and Fridays in the diagnosis and treatment of the common skin diseases. Drs. Abercrombie, Robinson and Gately. Dispensary instruction, Mercy Hospital. Dr. Rosenthal.

ORTHOPAEDIC SURGERY

ROBERT W. JOHNSON, JR., A.B., M.D.....	Professor of Orthopaedic Surgery
ALBERTUS COTTON, A.M., M.D.....	Professor of Orthopaedic Surgery
COMPTON RIELY, M.D.....	Clinical Professor of Orthopaedic Surgery

HARRY L. ROGERS, M.D.....	Associate in Orthopaedic Surgery
CLEMENT R. MONROE, M.D.....	Instructor in Orthopaedic Surgery
W. A. SIMPSON, A.B., M.D.....	Instructor in Orthopaedic Surgery
CLIFFORD LEE WILMOTH, B.S., M.D.....	Instructor in Orthopaedic Surgery
MOSES GELLMAN, M.D.....	Instructor in Orthopaedic Surgery
RAYMOND LENHARD, A.B., M.D.....	Associate in Orthopaedic Surgery
I. H. MASERITZ, M.D.....	Assistant in Orthopaedic Surgery

In this course didactic, clinical, bedside and out-patient instruction will be given. This instruction is provided in the University Hospital Amphitheatre, Mercy Hospital and Dispensary and Kernan Hospital and Industrial School for Crippled Children at "Radnor Park" and in the Dispensary of the University Hospital.

Lectures or clinics will be held at each of the hospitals named in town once a week. In addition, a weekly bedside clinic will be held for small sections of the class at "Radnor Park" and Mercy Hospital. Daily teaching in the Dispensary will be stressed. nation, pathology, diagnosis and treatment in this specialty.

The course will cover instruction in the special methods of examination, pathology, diagnosis and treatment in this specialty.

A brief outline and demonstration will also be given of the apparatus employed in Physiotherapy, Muscle Training and Corrective Gymnastics.

ROENTGENOLOGY

HENRY J. WALTON, M.D.....	Professor of Roentgenology
ALBERTUS COTTON, M.D.....	Professor of Roentgenology
EUGENE L. FLIPPIN, M.D.....	Instructor in Roentgenology

An effort is made to familiarize the student with the appearance of normal Roentgenograms, after which instruction is given in the interpretation of the more common pathological lesions seen on the X-ray films and fluroscopic screen. The history, physics and prac-

tical application of Roentgen Rays are alluded to, but not stressed. Weekly demonstrations are given to sections of the fourth year class.

DIATHERMY AND RADIUM THERAPY

CHARLES REID EDWARDS, M.D.,

Clinical Professor of Surgery

Students are taken in groups and are taught the indications for the use of radium in the treatment of malignant and non-malignant conditions. The course also includes the use of diathermy in the treatment of disease.

DISEASES OF THE THROAT AND NOSE

EDWARD A. LOOPER, M. D.....Professor of Diseases of the Throat and Nose

W. F. ZINN, M.D.....Clinical Professor of Diseases of the Throat and Nose

FRANKLIN B. ANDERSON, M.D....Associate in Diseases of the Throat and Nose

R. F. MCKENZIE, M.D.....Instructor in Diseases of the Throat and Nose

Third Year. Instruction to entire class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and modern methods of diagnosis. Lectures are illustrated by lantern slides. Dr. Looper.

Fourth Year. Dispensary instruction daily to small sections at the University and the Mercy Hospitals. The student is given opportunity to study, diagnose and treat practical cases under an instructor. Ward classes and clinical demonstrations are given one and one-half hours weekly throughout the session in the University and the Mercy Hospitals.

GENITO-URINARY DISEASES

W. H. TOULSON, A.B., M.Sc., M.D.,

Associate Professor of Genito-Urinary Diseases

A. J. GILLIS, M.D.....Associate Professor of Genito-Urinary Diseases

HARRIS GOLDMAN, M.D.....Associate in Genito-Urinary Diseases

AUSTIN H. WOOD, M.D.....Associate in Genito-Urinary Diseases

L. K. FARGO, M.D.....Instructor in Genito-Urinary Diseases

L. J. MILLAN, M.D.,Instructor in Genito-Urinary Diseases

K. D. LEGGE, M.D.....Instructor in Genito-Urinary Diseases

H. C. KNAPP, M.D.....Assistant in Genito-Urinary Diseases

H. T. COLLENBERG, M.D.....	Assistant in Genito-Urinary Diseases
J. H. COLLISON, M.D.....	Assistant in Genito-Urinary Diseases
WILLIAM EMBICH, M.D.....	Assistant in Genito-Urinary Diseases

Third Year. Eight hours to the entire class. This course is a didactic one in the principles of Genito-Urinary Surgery. Dr. Toulson.

Fourth Year. The course includes urethroscopy, cystoscopy, ureter catheterization, renal functional tests, urography, urine cultures, etc. The teaching consists of clinics in the amphitheater, ward rounds, and attendance by members of the Senior class upon out-patients in the dispensary. The dispensary classes are carried on both at the Mercy and the University Hospital dispensaries. In the latter institution the Maryland State Department of Health conducts a venereal-disease clinic, in which 20,133 visits were paid last year. Every variety of venereal disease is here encountered, and this rich wealth of material is available for teaching purposes. In addition to this, a cystoscopic clinic is conducted in another part of the dispensary, where the students are given practical instruction in the modern diagnostic methods.

DISEASES OF THE COLON AND RECTUM

G. MILTON LINTHICUM, A.M., M.D.,	Professor of Diseases of Rectum and Colon
CHARLES F. BLAKE, M.D.....	Professor of Diseases of Rectum and Colon
J. DAWSON REEDER, M.D.,	Associate Professor of Diseases of Rectum and Colon
L. J. ROSENTHAL, M.D.,	Associate Professor of Diseases of Rectum and Colon
MONTE EDWARDS, M.D.....	Associate in Diseases of Rectum and Colon

Third Year. Six hours to the entire class. This course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and will cover the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Linthicum.

The class is divided into sections for clinical instruction in the Baltimore City Hospitals. Dr. Linthicum.

Fourth Year. Ward and Dispensary instruction is given in the University and Mercy Hospitals, where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope and examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Drs. Blake and Rosenthal. University Hospital—Drs. Linthicum and Reeder.

BRONCHOSCOPY AND ESOPHAGOSCOPY

WAITMAN F. ZINN, M.D.

Clinical Professor of Diseases of Throat and Nose

Clinical Lectures and Demonstrations once weekly at University and Mercy Hospitals.

Etiology, symptomatology, diagnosis and prophylaxis of foreign bodies in the air and food passages. Bronchoscopy as an aid in the diagnosis and treatment of diseases of the lungs. Bronchoscopy as an aid to the surgeon. Diseases of the trachea. Diseases of the esophagus. All the phases of these subjects that the general practitioner should know are demonstrated clinically.

OTOLOGY

J. W. DOWNEY, M.D., Professor of Otology.

The course in Otology is planned to teach a practical knowledge of the anatomy and physiology of the ear, its proximity and relationship to the brain and other vital structures. The inflammatory diseases, their etiology, diagnosis, treatment and complications are particularly stressed, with emphasis upon their relationship to the diseases of children, head-surgery and neurology.

Third Year. The entire class is given instruction by means of talks, anatomical specimens and lantern slides.

Fourth Year. Small sections of the class receive instruction and make personal examinations of patients under the direction of an instructor. The student is urged to make a routine examination of the ear in his ward work in general medicine and surgery.

DEPARTMENT OF OBSTETRICS

J. M. H. ROWLAND, M.D.....	Professor of Obstetrics
L. H. DOUGLASS, M.D.....	Professor of Clinical Obstetrics
CHARLES E. BRACK, M.D.....	Clinical Professor of Obstetrics
J. McF. BERGLAND, M.D.....	Associate Professor of Obstetrics
E. P. SMITH, M.D.....	Associate in Obstetrics
EMIL NOVAK, M.D.....	Associate in Obstetrics
J. G. M. REESE, M.D.....	Associate in Obstetrics
M. A. NOVEY, A.B., M.D.....	Associate in Obstetrics
J. G. MURRAY, JR., A.B., M.D.....	Associate in Obstetrics
J. J. ERWIN, M.D.....	Instructor in Obstetrics
ISADORE A. SIEGEL, A.B., M.D.....	Instructor in Obstetrics
MAURICE SHAMER, M.D.....	Assistant in Obstetrics

Third Year. Three lectures and recitations each week by Drs. Bergland, Novak, Murray, Douglass and Rowland to entire class. Manikin Work, Drs. Brack, Smith and Erwin to sections of class at Mercy Hospital, and Drs. Douglass, Reese, Novey, Siegel and Rowland at University Hospital.

Fourth Year. Clinical Conference. One hour each week. Drs. Rowland, Douglass and Murray.

WARD CLASSES. Six hours per week for five weeks to sections of class at University Hospital. Drs. Douglass, Reese, Novey and Rowland.

Each member of the Senior class is required to deliver twelve women in their homes under supervision of the teaching and resident staff.

DEPARTMENT OF GYNECOLOGY

WILLIAM S. GARDNER, M.D.....	Professor of Gynecology
HUGH BRENT, M.D.....	Associate Professor of Gynecology
ABRAHAM SAMUELS, M.D.....	Associate Professor of Gynecology
GEORGE A. STRAUSS, M.D.....	Associate in Gynecology
R. G. WILLSE, M.D.....	Associate in Gynecology
T. K. GALVIN, M.D.....	Associate in Gynecology
J. M. HUNDLEY, JR., M.D.....	Associate in Gynecology
LEO BRADY, M.D.....	Associate in Gynecology

Third Year. DIDACTIC WORK. A course of thirty lectures and recitations.

CLINICAL WORK. Six hours weekly for one trimester. In this course the student writes the clinical history of each patient in the ward, makes a general physical examination, including the blood and urine, before the patient is brought before the class. One student under supervision gives the anaesthetic, a pelvic examination is made by six students, and any operation required is then done before a section of the class small enough to see clearly what is being done and how it is done. On a subsequent day the whole group examines, microscopically, sections prepared from material removed from patients that have been before them.

DEPARTMENT OF OPHTHALMOLOGY

CLYDE A. CLAPP, M.D.....	Professor of Ophthalmology
M RANDOLPH KAHN, M.D.....	Clinical Professor of Ophthalmology
H. K. FLECK, M.D.....	Associate Professor of Ophthalmology
JOSEPH I. KEMLER, M.D.....	Associate in Ophthalmology
HENRY F. GRAFF, A.B., M.D.....	Assistant in Ophthalmology
A. LLOYD MACLEAN, M.D., C.M.....	Assistant in Ophthalmology

Third Year. First semester, Course in Diseases of the Eye. Dr. Randolph Kahn.

Practical Course in Ophthalmoscopy, once weekly, in sections.

Fourth Year. CLINICS IN DISEASES OF THE EYE, weekly, for one-half year. Dr. Clapp.

DISPENSARY INSTRUCTION, daily to small sections. Drs. Kahn, Fleck, Kemler, Graff and MacLean.

The course in Ophthalmology is designed to familiarize the students with the common diseases of the eye, their recognition and treatment, with a view to meet the needs of the general practitioner. Special emphasis is laid upon the relation between diseases of the eye and systemic diseases and diseases of other organs.

THE HISTORY OF MEDICINE

JOHN RATHBONE OLIVER, A.B., M.D., Ph.D.

Professor of the History of Medicine

During the past year the lectures have been entirely devoted to the History of Medicine in the Eighteenth Century. Ten lectures in all were given. The first five were devoted to a general survey of Eighteenth Century medicine beginning with a description of the historical background of the period. The five remaining lectures were devoted to outstanding personalities in the Eighteenth Century such as the Hunters, Jenner, Auenbrugger, Lettson, Meade. Thanks to the cooperation of the official photographer to the Medical Museum in Washington and to the photographic department of our own medical school the lectures were illustrated with long series of slides. Next year it is proposed to devote the entire time to the Nineteenth Century. After that the four years' circle of lectures will begin over again with early medicine, Egyptian, Assyrian, Greek and Roman.

FIRST YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 30, 1929, TO FEBRUARY 1, 1930

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	Laboratory Histology and Embryology	Laboratory Histology and Embryology		Laboratory Histology and Embryology	Laboratory Histology and Embryology	Laboratory Anatomy
12.00 to 1.00	Lunch	Lunch		Lunch	Lunch	
1.00 to 2.00	Anatomy C. H. & A. H.	Anatomy A. H.	Anatomy A. H.	Anatomy C. H. & A. H.	Anatomy C. H.	
2.00 to 5.00	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	

SECOND SEMESTER, FEBRUARY 3, TO MARCH 29, 1930

9.00 to 12.00	Laboratory Anatomy (Feb. 3-Mar. 1)	Laboratory Anatomy (Feb. 3-Mar. 1)	(11.30-12.30) Biological Chemistry A. H.	Laboratory Biological Chemistry Section A	Laboratory Biological Chemistry Section B	Laboratory Anatomy (Feb. 3-Mar. 1)
12.00 to 1.00	Biological Chemistry C. H.	Biological Chemistry C. H.	(12.30-1.00) Lunch	Biological Chemistry C. H.	Biological Chemistry C. H.	
1.00 to 2.00	Lunch	Lunch	Biological Chemistry C. H.	Lunch	Lunch	
(Feb. 3- Mar. 1) 2.00-3.00 and 3.00-5.00	Anatomy A. H. & C. H.	Anatomy A. H.	Anatomy A. H.	Laboratory Biological Chemistry Section B	Laboratory Biological Chemistry Section A	
	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy			
(Mar. 3 to 29) 2.00 to 5.00	Neural Anatomy					

SECOND SEMESTER, MARCH 31, TO MAY 24, 1930

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 11.00				Laboratory Biological Chemistry Section A	Laboratory Biological Chemistry Section B	
11.00 to 12.00	Physiology C. H.	Physiology C. H.	(11.30-12.30) Biological Chemistry A. H.	Physiology Section B	Physiology Section A	
12.00 to 1.00	Biological Chemistry C. H.	Biological Chemistry C. H.	(12.30-1.00) Lunch	Biological Chemistry C. H.	Biological Chemistry C. H.	
1.00 to 2.00	Lunch	Lunch	Biological Chemistry C. H.	Lunch	Lunch	
2.00 to 3.00	Laboratory	Laboratory	Physiology C. H.	Laboratory	Laboratory	
3.00 to 4.00	Biological Chemistry Section A	Biological Chemistry Section B	Physiology C. H.	Biological Chemistry Section B	Biological Chemistry Section A	
4.00 to 5.00	Physiology Section B	Physiology Section A		Physiology Section A	Physiology Section B	

LOCATIONS OF LECTURE HALLS AND LABORATORIES:

A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
 C. H.—Chemical Hall, N. E. Cor. Lombard and Greene Streets.
 Anatomy Laboratory—Third Floor, Gray Laboratory, Lombard and Greene Streets.
 Biological Chemistry Laboratory—Third Floor, Dental Building, Lombard and Greene Streets.
 Histology and Embryology Laboratory—32-34 S. Paca Street, Sixth Floor.
 Neural Anatomy Laboratory, 32-34 S. Paca Street, Sixth Floor.

SECOND YEAR SCHEDULE

FIRST SEMESTER, SESSION 1929-1930

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 9.00 to 10.00	*Physiology A. H.	Physiology A. H.	Physiology A. H.	Laboratory	Laboratory	No Classes Scheduled
10.00 to 11.00	Pharmacology A. H.	Pharmacology A. H.	Pharmacology A. H.	Physiology Section A	Physiology Section B	
11.00 to 12.00	Pathology A. H.	Pathology A. H.	Bacteriology A. H.	Pharmacology Section B	Pharmacology Section A	
12.00 to 12.30 P. M.	Lunch	Lunch	(12-1 P. M.) Lunch	Lunch	(12-1 P. M.) Lunch	
12.30 to 1.30	Laboratory	Laboratory	(1-2 P. M.) Medicine A. H.	Laboratory	(1-2 P. M.) Physiology A. H.	
1.30 to 2.30	Bacteriology	Bacteriology	(2-4 P. M.) Laboratory Bacteriology	Bacteriology	(2-4 P. M.) Physical Diagnosis	
				(2.30- 3.30 P. M.) Physiology A. H.	Univ. Hosp. Disp.	
2.30 to 5.30	Laboratory Physiology Section A Pharmacology Section B	Laboratory Physiology Section B Pharmacology Section A				

SECOND SEMESTER, SESSION 1929-1930

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 9.30		Surgery A. H.	Immunology A. H.	Laboratory Pharmacology Section B	Laboratory Pharmacology Section A	(Feb. 8-Mar. 1) (10-11) Surgical Anatomy A. H.
9.30 to 10.30	Pharmacology A. H.	Pharmacology A. H.	Pharmacology A. H.			
10.30 to 11.30	Pathology A. H.	Pathology A. H.	Surgical Anatomy A. H.			
11.30 to 12.00	Lunch	Lunch	Lunch	Lunch	Lunch	(11-12) Surgery C. H.
P. M. 12.00 to 2.00	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	(12-1) Medical Clinic Amp.
2.00 to 3.00	(Mar. 3- May 24 Surgical Anatomy A. H.	Laboratory	Laboratory	(Mar. 10- May 24)	(Mar. 10- May 24)	
3.00 to 5.00	(Mar 10- May 24) Laboratory Surgical Anatomy			Laboratory Surgical Anatomy	Laboratory Surgical Anatomy	

LOCATIONS OF LECTURE HALLS AND LABORATORIES:

A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.

Laboratories:

Bacteriology—Sixth Floor, 32-34 S. Paca Street.
Immunology—Sixth Floor, 32-34 S. Paca Street.
Pathology—Third Floor, Dental Building, Lombard and Greene Streets.
Pharmacology—Second Floor, Gray Laboratory, Lombard and Greene Streets.
Physiology—First Floor, Gray Laboratory, Lombard and Greene Streets.
Surgical Anatomy—Third Floor, Gray Laboratory, Lombard and Greene Streets.
Amp.—Amphitheatre, University Hospital, Lombard and Greene Streets.
Univ. Hospital, Disp.—Dispensary, University Hospital, Lombard and Greene Streets.
*Physiology Course Terminates January 26, 1930.

THIRD YEAR SCHEDULE

SESSION 1929-1930

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 9.30	Therapeutics C. H.	Pathology C. H.	Medicine C. H.	Surgery C. H.	Pathology C. H.	Surgery C. H.
9.30 to 10.30	Obstetrics C. H.	Surgery C. H.	Obstetrics C. H.	Medicine C. H.	Medicine C. H.	Therapeutics C. H.
10.30 to 1 P. M.	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch
1 to 2	Medical Clinic Amp.	Surgery C. H.	Neurology P. & S. 34	Gynecology P. & S. 34	(1.15 to 4.15)	Transfer
2.15 to 3.15	Pathology Laboratory	Pathology Laboratory	(2.30-4.30) Section A Clinical Medicine Surgery Gross Pathology at Bay View	(2-3) Clinical Pathology P. & S. 34		(2-4) Section B Clinical Medicine Surgery Gross Pathology at Bay View
3.15 to 4.15				(3-4) Eye and Ear P. & S. 34		
4.15 to 5.15	Pediatrics A. H.	Obstetrics C. H.	(2.45-4.15) Section B Group Work Ophthalmos- copy Practical Obstetrics Univ. Hosp.	Preventive Medicine Legal Medicine Mental Hygiene P. & S. 34	Preventive Medicine C. H.	

From 10.30 A. M. to 1.00 P. M. the class is divided into two sections, one section reporting at Calvert and Saratoga Streets, the other at Lombard and Greene Streets.
 C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.
 A. H.—Anatomical Hall—N. E. Cor. Lombard and Greene Streets.
 Amp.—Amphitheatre—University Hospital, S. W. Cor. Lombard and Greene Streets.
 P. & S.—N. W. Cor. Calvert and Saratoga Streets. Rooms indicated on Second Floor.

At the beginning of the second semester Section "A" at Baltimore City Hospital on Saturdays, 2-4 P. M., and University Hospital on Wednesdays, 2.15-4.15 P. M.; Section "B" at Baltimore City Hospital on Wednesdays, 2.30-4.30 P. M.

FOURTH YEAR SCHEDULE

SESSION 1929-1930

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 9.00 to 11.00	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery Gynecology	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery Gynecology	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery Gynecology
1.00 to 12.00	Orthopaedic Surgery Univ. Sec. Amp. P. & S. Sec. 51	Medical Clinic Univ. Sec. Amp. Surgical Pathology P. & S. Sec. 40	Clinical Pathological Conference Univ. Sec. C. H. P. & S. Sec. 34	Surgical Clinic Univ. Sec. Amp. P. & S. Sec. 51	Medical Clinic Univ. Sec. Amp. P. & S. Sec. 34	Pediatrics Clinic Univ. Sec. Amp. P. & S. Sec. 34
P. M. 12.00 to 2	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary
2.15 to 3.15	Dermatology Clinic (Full Class at Univ. Hosp.) Amp.	Neurology Clinic Univ. Sec. Amp. P. & S. Sec. 34	Eye and Ear Clinic (Full Class at Univ. Hosp.) Amp.	Obstetrical Clinic (Full Class at Univ. Hosp.) Amp.	Gastro-Enter- ology Clinic (Full Class at Univ. Hosp.) Amp.	Genito- Urinary Clinic P. & S. Sec. 51
3.30 to 5.00	P. & S. Sec. Ward Classes Medicine Urology Eye and Ear	Ward Classes Therapeutics Proctology Radiotherapy	P. & S. Sec. Ward Classes Medicine Roentgenology Preventive Medicine	Ward Classes Medicine Nose & Throat Physical Therapeutics	Ward Classes Neurology Psychiatry U. H. Orthopaedic Surgery Kernan Hospital	
3.30 to 5.00	Univ. Sec. Ward Classes Medicine Urology		Univ. Sec. Ward Classes Medicine Roentgenology Eye and Ear	(5 to 6 P.M.) March, April and May History of Medicine C. H.		

The Senior Class is divided into two sections, which report, one at Lombard and Greene Streets, the other at Calvert and Saratoga Streets, for one semester each, then rotate.

Each section of the class is divided into three groups—Medical, Surgical, and Special. These groups will rotate on the following dates:

FIRST SEMESTER

1st period, Oct. 7—Nov. 9.
2nd period, Nov. 11—Dec. 14.
3rd period, Dec. 16—Feb. 1.

SECOND SEMESTER

1st period, Feb. 3—Mar. 8.
2nd period, March 10—April 12.
3rd period, April 14—May 17.

C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.

Amp.—Amphitheatre—University Hospital.

P. & S., 34—Second Floor, Calvert and Saratoga Streets.

P. & S., 40, 51—Fourth Floor, Calvert and Saratoga Streets.

REQUIREMENTS FOR MATRICULATION

Admission to the course in medicine is by a completed Medical Student Certificate issued by the Registrar of the University of Maryland. This certificate is obtained from the Registrar on the basis of satisfactory educational credentials, and is essential for admission to any class.

The minimum requirements for the issuance of the Medical Student Certificate are:

(a) The completion of a standard four-year high school course or the equivalent, and, in addition, at least

(b) Two years or sixty semester hours of college credits, including chemistry, biology, physics and English.

Women are admitted to the School of Medicine of this University.

(A) HIGH SCHOOL REQUIREMENTS

Graduation from an accredited high or preparatory school, after pursuing a four-year course based upon an eight-year elementary course, or its full equivalent as demonstrated by entrance examinations.

At least fifteen units must be offered.‡

SCHEDULE OF SUBJECTS REQUIRED OR ACCEPTED FOR ENTRANCE TO THE PREMEDICAL COLLEGE COURSE

Subjects	Units*	Required
GROUP I, ENGLISH—(I—II—III—IV)—		
Literature and Composition.....	3	3
GROUP II, FOREIGN LANGUAGES—		
Latin	2-4	} 2†
Greek	2-3	
French or German.....	2-4	
Other foreign languages.....	2-4	
GROUP III, MATHEMATICS—		
Elementary algebra	1	1
Advanced geometry	½-1	..
Plane geometry	1	1
Solid geometry	½	..
Trigonometry	½	..

GROUP IV, HISTORY AND ECONOMICS—

Ancient history	1	}	1
Medieval and modern history.....	1		
English history	1		
American history	$\frac{1}{2}$ -1		
Civil government	$\frac{1}{2}$ -1		
Economics	$\frac{1}{2}$ -1		

GROUP V, SCIENCE—

Botany	$\frac{1}{2}$ -1	}	1
Zoology	$\frac{1}{2}$ -1		
Chemistry	1		
Physics	1		
Physiography	$\frac{1}{2}$ -1		
Physiology	$\frac{1}{2}$ -1		
Astronomy	$\frac{1}{2}$		
Geology	$\frac{1}{2}$ -1		

GROUP VI, MISCELLANEOUS—

Vocational—including agriculture, commercial, home economics, industrial, etc.	1-4
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*A unit is the credit value of at least thirty-six weeks' work of four or five recitation periods per week, each recitation period to be not less than forty minutes. In other words, a unit represents a year's study in any subject in a secondary school constituting approximately a quarter of a full year's work. A satisfactory year's work in any subject cannot be accomplished under ordinary circumstances in less than 120 sixty-minute hours, or their equivalent.

†Both of the required units of foreign language must be of the same language, but the two units may be presented in any one of the languages specified.

‡Of the fifteen units of high school work, nine units are required, as indicated in the foregoing schedule; the remainder may be made up from any of the other subjects in the schedule, provided that at least eleven units must be offered in Groups I-V.

(B) DETAILS OF THE COLLEGE REQUIREMENT

a. The preliminary college course shall extend through two college sessions of at least thirty-two weeks each of actual instruction, including final examinations.

b. In excellence of teaching and in content, the work of this preliminary college course shall be equal to the work done in the freshman and sophomore years in standard colleges and universities.

c. This preliminary college course shall include courses in physics, chemistry, biology and English, each course to embrace at least six,

eight or twelve hours of work in each subject, as shown in the schedule following:

SCHEDULE OF SUBJECTS OF THE TWO-YEAR
PREMEDICAL COLLEGE COURSE

Sixty Semester Hours Required

REQUIRED COURSES:	<i>Semester Hours</i>
Chemistry (a)	12
Physics (b)	8
Biology (c)	8
English Composition and Literature (d)	6

COURSES STRONGLY URGED:

A modern foreign language
Comparative vertebrate anatomy
Psychology
Social science

Beginning with the session of 1930-31 one year (6 semester hours) of a modern foreign language will be required.

A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be of not less than fifty minutes' duration net, at least, two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

(a) CHEMISTRY. Twelve semester hours required of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work, and four semester hours in organic chemistry, including two semester hours of laboratory work. In the interpretation of this rule, work in qualitative analysis may be counted as general inorganic chemistry.

(b) PHYSICS. Eight semester hours required, of which at least two must be laboratory work. This course presupposes a knowledge of plane trigonometry.

(c) BIOLOGY. Eight semester hours required, of which four must be laboratory work. This requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone.

(d) ENGLISH COMPOSITION AND LITERATURE. The usual introductory college course of six semester hours, or its equivalent, is required.

COMBINED COURSE IN ARTS AND MEDICINE

A combined seven years' curriculum is offered, leading to the degrees of Bachelor of Science and Doctor of Medicine. The first three years are taken in residence at College Park, and the last four years in Baltimore, at the School of Medicine. The premedical curriculum constitutes the first two years' work, and the third year follows a general outline of prescribed and elective courses approved by the chairman of the premedical committee and the dean of the College of Arts and Sciences.

Upon the successful completion of the first year in the School of Medicine, and upon the recommendation of the dean, the degree of Bachelor of Science may be conferred by the College of Arts and Sciences at College Park.

Students are urged to consider carefully the advantages this combination course offers over the minimum requirements of the two years. By completing three years the training may be gradually broadened by a wider latitude in the election of courses in the arts subjects.

POST-GRADUATE STUDENTS

Graduates in medicine desiring to take the work of the senior year without being candidates for the degree, and, therefore, without examination, may receive a certificate of attendance on completing the full course satisfactorily.

The requirements for graduates in medicine admitted to the fourth-year class as candidates for the degree of Doctor of Medicine are the same as those enforced against undergraduates admitted to advanced standing.

Summer Post-Graduate Courses—In the April number of the Bulletin detailed announcement will be made of the Post-Graduate Summer Courses.

RULES

1. All students are required to take the spring examinations unless excused by the Dean. No student will be permitted to advance from a lower to a higher class with conditions.

2. Should a student be required to repeat any year in the course, he must pay regular fees.

3. A student failing in final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and to take examination in such other branches as may be required should he again be permitted to enter the school as a candidate for graduation.

4. The general fitness of a candidate for graduation will be taken into consideration by the Faculty as well as the results of his examination.

5. All students entering the School of Medicine of the University of Maryland are required to provide themselves with microscopes of a satisfactory type.

A standard microscope of either Bausch & Lomb, Leitz, Spencer Lens or Zeiss make, fitted with the following attachments, will fill the requirements:

Triple nose piece	10 x and 5 x Oculars
Wide aperture stage	16mm. and 4mm. Objectives
Quick Screw condenser (Abbe)	1.9mm. 1.25 N.A. Oil Immersion Lens

All the above rules, as well as the fees stated below, relate to the year ending June 7th, 1930 only. The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the Faculty deem it expedient.

FEES

Matriculation fee (paid once).....	\$10.00
Tuition fee (each year) for residents of Maryland.....	300.00
Tuition fee (each year) for non-residents.....	450.00
Laboratory fee (each year).....	25.00
Special and re-examination fee.....	5.00
Graduation fee	15.00

No fees are returnable.

The above fees apply to all students who matriculate in this institution in any class for the session beginning September 30, 1929.

All students, after proper certification, are required to register at the Registrar's Office. The last date of registration is October 7th, 1929.

Matriculation, laboratory and tuition fees for the first semester shall be paid at the time of registration, and for the second semester on or before February 3rd, 1930.

Failure to meet these conditions will automatically debar the student from attendance on classes and other privileges of the University.

Students who fail to pay the tuition and other fees on or before the last day of registration for each term or semester, as stated in the catalogue, will be required to pay as an addition to the fees required the sum of Five (\$5.00) Dollars, and if the payment so required shall not be paid before twenty (20) days from the beginning of said term of semester, the student's name shall be stricken from the rolls.

When offering checks in payment of tuition and other fees, students are requested to have same drawn in the exact amount of such fees. Personal checks whose face value is in excess of the fees due will be accepted for collection.

Students who are minors are considered to be resident students, if at the time of their registration their parents or guardians have been residents of this State for at least one year.

Adult students are considered to be resident students, if at the time of their first registration they have been residents of this State for at least one year.

The status of the residence of a student is determined at the time of his first registration in the University, and may not thereafter be changed by him unless, in the case of a minor, his parents or guardians move to and become legal residents of this State.

PRIZES AND SCHOLARSHIPS

FACULTY PRIZE

To stimulate study among the candidates for graduation, the Faculty offers a Gold Medal to the candidate who secures the highest average during the four years of his course. Certificates of Honor are awarded to the five candidates standing next highest.

DR. JOSE L. HIRSH MEMORIAL PRIZE

A prize of \$50.00 is given each year by Mrs. David Myers as a memorial to the late Dr. Jose L. Hirsh, formerly Professor of

Pathology in this School, to the student in the third year who has done the most satisfactory work in Pathology during his second and third years.

DR. A. BRADLEY GAITHER MEMORIAL PRIZE

A prize of \$25.00 is given each year by Mrs. A. Bradley Gaither as a memorial to the late Dr. A. Bradley Gaither, to the student in the senior class doing the best work in Genito-Urinary Surgery.

SCHOLARSHIPS

The Dr. Samuel Leon Frank Scholarship

(Value \$125.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this University.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Medical Council "to a medical student of the University of Maryland, who in the judgment of said Faculty, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student who has successfully completed one year's work in this school, and no student may hold such scholarship for more than two years.

The Charles M. Hitchcock Scholarships

(Value \$125.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the University.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University upon nomination by the Medical Council to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Faculty satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

The Randolph Winslow Scholarship

(Value \$125.00)

This scholarship was established by Prof. Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Medical Council, to a "needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Medical Council that he is worthy of and in need of assistance."

The Dr. Leo Karlinsky Scholarship

(Value, \$200.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of this University.

The scholarship is awarded to a second-year student who at the end of the first year passes the best examination in Anatomy, Histology, Embryology, Physiology and Biological Chemistry.

The University Scholarships

Two scholarships are awarded by the University. One to a student of the College of Arts and Sciences appointed by the President, to be held for only one year; the other, which entitles the holder to exemption from payment of the tuition fee of the year, is awarded annually by the Medical Council to a student of the Senior Class who presents to the Medical Council satisfactory evidence that he is of good moral character and is worthy of and in need of assistance to complete the course.

Frederica Gehrman Scholarshp

This scholarship was established by the bequest of the late Mrs. Frederica Gehrman and entitles the holder to exemption from pay-

ment of tuition fees. The scholarship is awarded to a third-year student who at the end of the second year passes the best practical examination in Anatomy, Physiology, Biological Chemistry, Pharmacology, Pathology, Immunology and Serology.

The Clarence and Geneva Warfield Scholarships

(Valuation, \$300.00 each)

There are five scholarships established by the Regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships will be available to students of any of the classes of the course in medicine. Preference is given to students from the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine, for a term of two years, in the county to which the student is accredited or in a county selected by the Council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Council, the money advanced by the Regents shall be refunded.

Israel and Cecelia E. Cohen Scholarships

(Value, \$250.00)

This scholarship was established by Miss Eleanor S. Cohen in memory of her parents, Israel and Cecelia E. Cohen. Terms and conditions:

This scholarship will be available to students of any one of the classes of the course in Medicine; preference is given to students of the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the Council.

Daughters of Harmony Scholarship

(Value, \$100.00)

This scholarship is given each year by the Daughters of Harmony as part payment of the tuition of a needy student of good character. He must be a member of the senior class and a bona fide resident of Baltimore. He must be nominated by the Medical Council.

ANNUAL HOSPITAL APPOINTMENTS

On February 1st of each session the following annual appointments are made from among the graduates of the school:

TO THE UNIVERSITY HOSPITAL

Two Resident Surgeons
Two Resident Physicians
One Resident Gynecologist

Two Resident Obstetricians
Thirteen Junior Residents on a
Rotating Service

A number of students are appointed each year, at the close of the session, as Clinical Assistants in the University Hospital for the summer months.

TO THE MERCY HOSPITAL

Chief Resident Physician
One Assistant Resident Physician
Chief Resident Surgeon
Five Assistant Resident Surgeons

One Resident Gynecologist
One Resident Obstetrician
Eight Junior Residents on a Rotat-
ing Service

NOTICE TO STUDENTS

The personal expenses of the students are at least as low in Baltimore as in any large city in the United States. The following estimates of a student's personal expenses for the academic year of eight months have been prepared by students, and are based upon actual experience:

<i>Items</i>	<i>Low</i>	<i>Average</i>	<i>Liberal</i>
Books	\$50	\$75	\$100
College Incidentals	20	20	20
Board, eight months.....	200	250	275
Room rent	64	80	100
Clothing and laundry.....	50	80	150
All other expenses.....	25	50	75
	<hr/>	<hr/>	<hr/>
Total.....	\$409	\$556	\$720

Students will save time and expense upon their arrival in the city by going direct to the School of Medicine on the University grounds, N. E. Corner Lombard and Greene Streets, where the Secretary of Student Y. M. C. A., who may be found at his office on the premises, will furnish them with a list of comfortable and convenient boarding houses suitable to their means and wishes.

For further information, apply to

J. M. H. ROWLAND, M. D., *Dean*,

Lombard and Greene Streets.

MATRICULATES, UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, 1928-1929

FOURTH YEAR CLASS

ACKERMAN, JACOB HAROLD, A.B., New York	GUIGLIA, SASCHA FACCHETTI..New York
ALESSI, SILVIO A., Ph.G.....Maryland	HANEY, JOHN JAMES.....New Jersey
AMOS, HUGH, B.S.....Ohio	HECK, LEROY SAVIN, B.S., Ph.G., Maryland
ANDERSON, WALTER ANDERS, D.D.S., Ph.G. ....Maryland	HELMS, SAMUEL THOMAS, B.S...Virginia
BARDWELD, BENJAMIN B....New Jersey	HOLROYD, FRANK JACKSON, A.B., B.S., West Virginia
BARLAND, SAMUEL, JR., B.S...New York	HOROWITZ, MORRIS, A.B...Massachusetts
BERNHARD, ROBERT.....New York	HUSTED, SAMUEL HARLEY...New Jersey
BIRELY, MORRIS FRANKLIN, A.B., Maryland	ISERN, RAFAEL ANGEL VILAR, B.S., Porto Rico
BONGIORNO, HENRY DOMENIC, Ph.G., New Jersey	JACKSON, MURRAY ELLIOT, B.S., New York
BOTSCH, BERNARD, B.S.....Ohio	JACOBS, ABRAHAM, B.S.....New York
BOWEN, JAMES POORE, B.S., South Carolina	KELLY, CLYDE ERNEST, A.B., Pennsylvania
BRAHMS, MAX, B.S.....New York	KENDALL, BENJAMIN HORTON, A.B., North Carolina
BRAUER, SELIG LEO.....New Jersey	KNIGHT, WALTER PHILLIPS..Pennsylvania
CALAS, ANDRES ELADIO.....Cuba	LEVI, ERNEST, Ph.G.....Maryland
CHAMBERS, EARL LEROY.....Maryland	LEVY, WALTER HOWARD.....New York
CHAPMAN, WILLIAM HARDE...Maryland	LYNN, IRVING, B.S.....New Jersey
CHRISTIAN, WILLIAM.....Pennsylvania	LYNN, JOHN GALLOWAY, 4TH..Maryland
CICCONI, ARNOLD WILLIAM, Rhode Island	MATSUMURA, JUNICHI.....Hawaii
CLARK, FRANCIS ALDEN, B.S., West Virginia	MCANDREW, JOSEPH THEODORE, West Virginia
COHEN, HERMAN.....New Jersey	MCDOWELL, ROY HENDRIX, A.B., North Carolina
COHEN, PAUL HENRY, A.B....Maryland	McGOWAN, JOSEPH FRANCIS, Pennsylvania
CONN, JACOB HARRY, A.B.....Maryland	MERANSKI, ISEAELE PETER, B.S., Connecticut
CORSELLO, JOSEPH NICHOLAS, B.S., New York	MORGAN, ISAAC JOSEPH, B.S. Pennsylvania
DAILEY, WILLIAM PAUL...Pennsylvania	MURPHY, JOHN EDWARD...Pennsylvania
DANIELS, WILLARD FLOYD, B.S., West Virginia	NEISTADT, ISIDORE IRVING, A.B., Maryland
DEBARBIERI, FRED LOUIS, A.B., Pennsylvania	NEUMAN, FINLEY FREDERICK, A.B...Ohio
DRAPER, WILLIAM BATEMAN...Maryland	NEWMAN, SAUL CHARLES, B.S., Connecticut
FABMAN, MEYER DAVID, B.S..New York	NICKMAN, EMANUEL HARRISON, New Jersey
FARGO, WILLIAM RUSSELL, A.B., Maryland	OVERTON, LEWIS MARVIN, A.B., North Carolina
FATTEL, HENRY CHARLES, B.S., New Jersey	PENCHANSKY, SAMUEL JOSEPH, B.S., New Jersey
FEINGOLD, CHARLES RODIN, B. S., New York	PORTERFIELD, MAURICE COLEMAN, Maryland
FEIT, EMANUEL, B.S.....New York	PRAGER, BENJAMIN, B.S.....New York
FIFER, JESSE SHOWALTER, A.B., Delaware	REEDER, PAUL ARLINGTON, B.S., West Virginia
GARBER, JACOB S.....New York	
GIVNER, DAVID, A.B.....Maryland	
GOULDMAN, EDWIN FOSTER, B.S., Virginia	

FOURTH YEAR CLASS—Continued

REILLY, JOHN VINCENT.....New Jersey	STATON, LEON RAPHAEL, A.B.,
ROBERTS, ELDRED, B.S.....Maryland	North Carolina
SAFER, JAKE VICTOR.....Florida	STEVENSON, CHARLES CALVERT....Utah
SAFFORD, HENRY TOWNE, JR.....Texas	SULLIVAN, WILLIAM JOSEPH,
SCHREIBER, MORRIS BERNARD..New York	Rhode Island
SCHWARTZBACH, SAUL, A.B.,	TANNEBAUM, MORRIS, B.S....New York
District of Columbia	TAYLOR, CHARLES VIVIAN, A.B.,
SEIBEL, JACK, B.S.....New York	Maryland
SEKERAK, RAYMOND ANDREW,	ULLRICH, HENRY FRANZ.....Maryland
Connecticut	VANN, HOMER KING.....Florida
SERRA, LAWRENCE MARIO, Ph.G.,	VESTAL, TOM FLETCHER..North Carolina
Maryland	VOLENCK, LEE JOSEPH.....New York
SIKORSKY, ALBERT EDWARD, A.B.,	WALLACK, CHARLES ALBERT, B.S.,
Maryland	New Jersey
SILVER, MABEL IRENE, B.S....Maryland	WARD, HUGH WALTER, A.B....Maryland
SOIFER, ALBERT ALEXANDER, B.S.,	WATERS, ZACK JAMES, B.S.,
Maryland	North Carolina
SOLOMON, MILTON, B.S.....New York	WEISS, AARON.....New York
SPEICHER, WILBUR GLENN....Maryland	WILKERSON, ALBERT RUSSELL, Ph. G.,
SPENCER, ERNEST.....Maryland	Maryland
SPURRIER, OLIVER WALTER, A.B.,	YEAGER, GEORGE HERSCHEL, B.S.,
Maryland	Maryland
	YUDKOFF, WILLIAM, B.S....New Jersey

THIRD YEAR CLASS

ARONOFSKY, MILTON ROBERT, Ph.B.,	FEMAN, JACOB GEORGE, A.B....New York
Connecticut	FIOCCO, VINCENT JAMES, B.S..New York
ASHMAN, HARRY, B.S.....New York	FISHER, SAMUEL.....New Jersey
BAUMGARDNER, GEORGE MARTIN, A.B.,	FORD, JOHN LEONARD, B.S..Pennsylvania
Maryland	FORREST, DANIEL EFLAND, B.S.,
BAYLUS, MEYER MILBY, Ph.G..Maryland	North Carolina
BELINKIN, WILLIAM, B.S....New York	GAREY, JAMES LYMAN, B.S..Pennsylvania
BENFER, KENNETH LOUIS, A.B..Maryland	GARFINKEL, ABRAHAM, B.S....New York
BERKOWITZ, RUDOLPH, A.B....New York	GERNER, HARRY EZEKIEL, B.S.New Jersey
BERRY, ERWIN PHIFER..North Carolina	GERSTEN, PAUL FRANCIS.....New York
BLUM, JOSEPH SYDNEY, Ph.G.Maryland	GINSBERG, LEON, Ph.D.....New York
BONNER, MERLE DUMONT,	GOLDMAN, LESTER MILTON, B.S.,
North Carolina	New Jersey
BROWN, EUGENE SCOTT, B.S.,	GOLDSTEIN, JACOB EVERETT, B.S.,
West Virginia	New York
BURNS, JOHN HOWARD, JR., A.B.,	GOODMAN, JULIUS HENRY, Ph.G.,
Maryland	Maryland
CHANCE, LESTER THOMAS, B.S.,	HAMER, WILLIAM ALEXANDER, B.S.,
North Carolina	North Carolina
CHENITZ, WILLIAM, B.S.....New Jersey	HARRELL, LEON JACKSON, B.S.,
COHEN, ARCHIE ROBERT, Ph.G.,	North Carolina
Maryland	HARSHA, GENE MELFORD, B.S.,
COHEN, IRVING JOSEPH, Ph.G..Maryland	West Virginia
COHEN, MAX HURSTON, Ph.G..Maryland	HELMS, JOHN CHAPMAN, B.S....Virginia
COPPOLA, MATTHEW JOSEPH, B.S.,	HILDENBRAND, EMIL JOHN C., B.S.,
New York	Maryland
DURRETT, CLAY EARLE, B.S....Maryland	HILL, GEORGE DELMAS, B.S.,
DYAR, EDNA GERRISH, Ph.D.,	West Virginia
District of Columbia	HORNBAKER, JOHN HARLAN, A.B.,
FAVINACCI, CHARLES JOSEPH, A.B..Ohio	Maryland
FAW, WYLIE MELVIN, JR.....Maryland	HUDSON, ROLLIN CARL, A.B....Maryland

THIRD YEAR CLASS—Continued

JACKSON, MARSHALL VADEN, North Carolina	OPPENHEIM, JOSEPH HARRY..New York
JOHNSON, MARIUS PITKIN, A.B., Connecticut	OWEN, DUNCAN SHAW...North Carolina
KELLER, FREDERICK DOYLE, B.S., West Virginia	OWENS, ZACK DOXEY, B.S., North Carolina
KLEINMAN, ABRAHAM MORRIS, B.S., New York	PERLMAN, ROBERT, B.S.....New York
KOVARSKY, ALBERT ELIAS, A.B., New Jersey	REID, FRANCIS FIELDING, A.B., Maryland
KRAEMER, SAMUEL HARRY, B.S., New Jersey	RINEBERG, IRVING EDWARD, B.S., New Jersey
KREMEN, ABRAHAM, A.B.....Maryland	ROMANO, NICHOLAS MICHAEL Pennsylvania
KUHN, ESTHER FRANCES, A.B..Maryland	ROSENTHAL, ABNER HERMAN, B.S., New York
LEVIN, MORTON LOEB, Ph.G...Maryland	SHILL, BENJAMIN, A.B.....New Jersey
LEVY, SOLOMON, A.B.....Palestine	SHULMAN, LOUIS ROBERT....Maryland
LEWIS, FRANK RUSSELL.....Maryland	SMITH, JOSEPH JACOB, A.B...Connecticut
MACE, VERNIE EMMETT, B.S., West Virginia	SNOOPS, GEORGE JOHN, JR., A.B., Maryland
MAGOVERN, THOMAS FRANCIS..New Jersey	SNYDER, NATHAN, Ph.G.....Maryland
*MALONEY, LEONARD EUGENE, B.S., West Virginia	SOLTROFF, JACK GERSON, B.S., Pennsylvania
MANSDORFER, GEORGE BOWERS, B.S., Maryland	SPERLING, NATHANIEL MORTIMER, B.S., New York
MILLER, BENJAMIN HERMAN, A.B., Maryland	STRICKLAND, HORACE GILMORE, B.S., North Carolina
MILLER, ISAAC.....New Jersey	THOMPSON, CARL TRUMAN, B.S., A.B., West Virginia
MILLER, JAMES ALTON, A.B...Maryland	WARMAN, WILTON MERLE, A.B., B.S., West Virginia
MONTILLA, VICTOR JOSE.....Porto Rico	WEINSTEIN, JACK, B.S.....New York
MORTIMER, EGBERT LAIRD, JR., A.B., Maryland	WERNER, AARON SETH.....New York
MOSER, CHARLES YARNALL, B.S., West Virginia	WOOLLEY, ALICE STONE, B.S...New York
NEEDLE, NATHAN E.....Maryland	YOUNG, RALPH FUNK.....Maryland
OLIVER, ROBERT DELEON, B.S., North Carolina	ZEIGER, SAMUEL, B.S.....New York

SECOND YEAR CLASS

ADALMAN, PHILIP, Ph.G.....Maryland	DAWSON, WILLIAM MADDREN, B.S., New York
ALLEN, HOWARD STANLEY...Pennsylvania	DONOHUE, BERNARD WALKER, A.B., Maryland
ANDREW, DAVID HOLMES, A.B..Maryland	DRENGA, JOSEPH FRANCIS, A.B..Maryland
BALDWIN, KENNETH MALISON, Connecticut	ECKSTEIN, HARRY, B.S.....New York
BAMBERGER, BEATRICE, A.B...Maryland	EDEL, JOHN WESLEY, B.S.....Maryland
BARTON, PAUL CANFIELD, B.S.....Ohio	EISENBERG, DAVID, B.S.....New York
BAUMGARTNER, EUGENE IRVING, A.B., Maryland	ERNEST, ROY COOPER, A.B.....Ohio
BERMAN, HENRY IRVING.....Maryland	FELDMAN, SAMUEL, A.M.....Maryland
BRICE, ARTHUR TALBOTT....Maryland	FEUER, ARTHUR, B.S.....New York
BRILL, BERNARD.....New York	FITCH, WILMER PRICE.....New York
BRILL, JOHN LEONARD, A.B., Pennsylvania	FOSTER, RUTH.....Massachusetts
CONTRACT, ELI, A.B.....Maryland	FRIEDMAN, JOSEPH, B.S.....New York
DAVIS, MELVIN BOOTH, B.S...Maryland	GROSSMAN, ISADORE, A.B.....Maryland
	GROVE, DONALD BIRTNER.....Maryland

*Did not complete the year.

SECOND YEAR CLASS—Continued

GUNDRY, RACHEL KREBS, A.B..	Maryland	NOCERA, FRANCISCO PAOLO...	Porto Rico
HELFRICH, RAYMOND FREDERICK, A.B.,	Maryland	PALITZ, LEO SOLOMON, A.M...	New York
HOFFMAN, REUBEN, A.B.....	Maryland	*POST, CHARLES GORDON, A.B.,	New York
HOLLANDER, MARK BUCKNER, A.B.,	Maryland	REHMEYER, WALTER OWEN, B.S.,	Pennsylvania
HORN BROOK, KENT MAIDLOW,	West Virginia	RODRIGUEZ, MANUEL.....	Porto Rico
JACOBSON, SAMUEL MAURICE, Ph.G.,	Maryland	ROHM, ROBERT FRANKLIN...	Pennsylvania
JAKLITSCH, FRANK HENRY, B.S.,	New York	ROSENBERG, BENJAMIN, B.S....	New York
JENSEN, CARL DANA F.....	Washington	ROSENTHAL, HENRIETTA ESTELLE, Ph.B.,	Maryland
JETT, PAGE COVINGTON, A.B....	Maryland	ROZUM, JOHN CHARLES.....	New York
JONES, ARTHUR FORD.....	Maryland	SCHIMUNEK, EMMANUEL ALOISIUS, A.B.,	Maryland
KARGER, ABRAHAM, B.S.....	New York	SEABOLD, WILLIAM MERVEN...	Maryland
KAUFMAN, MAX, Ph.G.....	New York	SEIDMAN, HERMAN HAROLD, B.S.,	New York
KEEFE, WALTER JOSEPH, A.B.,	Connecticut	SHAW, CHRISTOPHER CAMPELL, Ph.B.,	Maryland
KERMISCH, ALBERT, Ph.G., B.S.,	Maryland	SHELLEY, HARRY SANDBERG, B.S.,	Maryland
KILGUS, JOHN FRANK.....	Pennsylvania	SHOCHAT, ALBERT JOSHUA, B.S.,	New York
KOHN, WALTER.....	Maryland	SIWINSKI, ARTHUR GEORGE, A.B.,	Maryland
KRIEGER, JEROME LEON, A.B....	Maryland	SKOVRON, MICHAEL, B.S....	Pennsylvania
LACHMAN, HARRY, B.S.....	Maryland	SLATE, MARVIN LONGWORTH, A.B.,	North Carolina
LANG, ABRAHAM, B.S.....	New York	SLAVCOFF, ALEXANDER, B.S..	Pennsylvania
LANGE LUTTIG, HARRY VERNON, A.B.,	Maryland	SMITH, SOLOMON, A.B.....	Maryland
LENER, PHILIP FRANK, A.B....	Maryland	SPRECHER, MILFORD HARSH, B.S.,	Maryland
LESHINE, SIDNEY STARR, B.S.,	Connecticut	STERLING, SUSANNE.....	Maryland
LEVINE, DAVID ROBERT, B.S....	New York	STEVENS, RUSSELL ALVIN, A.B.,	Pennsylvania
LUBIN, PAUL.....	Maryland	TAYLOR, ROBERT BRUCE....	Pennsylvania
MAHAN, EDGAR WADE, B.S..	Pennsylvania	VAN ORMER, WILLIAM ALFRED,	Pennsylvania
MANKOVICH, DESIDERIUS GEORGE,	Pennsylvania	WARREN, EDWARD WILLIAM...	New York
MARTIN, THOMAS ADRIAN, Ph.G.,	Maryland	WIGDERSON, HENRY, B.S.....	New York
MASTERTSON, JOHN FRANCIS...	New Jersey	*WOJICK, WILLIAM JOSEPH, A.B.,	Maryland
MEYER, LEO MARTIN, A.M....	New York		
MOYERS, WALDO BRIGGS, A.B.,	West Virginia		
MURPHY, RICHARD LAWRENCE, A.B.,	New Hampshire		

*Did not complete the year.

FIRST YEAR CLASS

ABRASHKIN, MORTIMER DICK, B.S., Connecticut	GIROUARD, FERNAND LOUIS...Connecticut
AHROON, CARL RICHARD, A.B..Maryland	GITTLEMAN, SOLOMON ELLMAN...New York
ALAGIA, LUCIA CARMELA.....Maryland	GLASS, ALBERT JULIUS, Ph.G...Maryland
ASHMAN, LEON, B.S.....Maryland	GLUCKMAN, ALBERT GERSON, B.S., Delaware
BEADENKOPF, ANNA LUCILLE, A.B., Maryland	GORENEBERG, HAROLD, A.B....New Jersey
*BELFORD, JOSEPH, Ph.G.....Maryland	GROLLMAN, ELLIS, Ph.G.....Maryland
BLUM, SAMUEL DANIEL, B.S...New York	GROSH, JOSEPH WALTER, B.S., Pennsylvania
BELL, CHARLES RAYMOND, B.S., Pennsylvania	HALPERIN, DAVID.....New Jersey
BELL, JAMES RUSSELL.....Pennsylvania	HAMMELL, FRANK MULL.....New Jersey
BERCOVITZ, NATHAN.....New York	HANAGAN, JOHN JOSEPH, B.S., New Hampshire
BERGER, HERBERT.....New York	HANTMAN, IRVIN, Ph.G.....Maryland
BIELINSKI, LEON BERNARD..Pennsylvania	*HARRINGTON, PETER FRANCIS, Rhode Island
BLUM, SAMUEL DANIEL, B.S...New York	HARRIS, JACOB, A.B.....New York
BOGER, WILLIAM JONAS, A.B., North Carolina	HECHT, MANES SCHEVER, A.B..Maryland
BOGESS, JOHN PAUL, A.B., West Virginia	HENDLER, HYMAN BERNARD....Maryland
BOGORAD, DANIEL EMIL.....Maryland	HULL, HARRY CLAY.....Maryland
BROWN, WILLIAM EDWARD...California	JACOBSON, MEYER WILLIAM, A.B., Maryland
BYER, JACOB, A.M.....New York	JONES, GRACE GERMANIA.....Maryland
CANNON, MARTIN.....Ohio	KAPLAN, ABRAHAM NATHAN, M.S., New York
CHIMACOFF, HYMAN.....New Jersey	KARFGIN, ARTHUR.....Maryland
CLAYMAN, DAVID STANFORD, Ph.G., Maryland	KATZ, ABRAHAM, B.S.....New York
COONEY, JOSEPH WILLIAM, A.B., Pennsylvania	KATZ, LEONARD.....Maryland
CORRIERE, JOSEF, B.S.....Pennsylvania	KATZENSTEIN, LAWRENCE, B.S..Maryland
CRECCA, ANTHONY DANIEL...New Jersey	KEISER, SYLVAN.....New York
CURRIE, DWIGHT McIVER, A.B., North Carolina	KIMMEL, CHARLES.....New Jersey
DAVIS, CARROLL KALMAN....New York	KINGSLEY, ALTON MASON...Pennsylvania
DAVOLOS, JOSEPH JOHN.....Delaware	KLIMES, LOUIS FRANK.....Maryland
DEMARCO, SALVATORE JOSEPH, A.B., Maryland	*KLINGENSMITH, FREDERICK CHESTER, Pennsylvania
DIAMOND, JOSEPH GEORGE...New Jersey	KOROSTOFF, BERNARD.....New York
DUMLER, JOHN CHARLES.....Maryland	KRESS, MILTON BERNARD....Maryland
*EASTERDAY, CARROLL EDWARD LEE, Maryland	KRIEGER, ALEXANDER ALLAN, Pennsylvania
EICHERT, HERBERT, Ph.G....Maryland	KRIETE, EDUARD WILLIAM, B.S..Maryland
EISENBRANDT, WILLIAM HENRY, A.B., Maryland	LAYNE, FRANK HOPKINS.....Kentucky
*ELLIOTT, ALICE WINIFRED.....Ohio	LECHNER, SIDNEY ISRAEL, B.S..New York
FALK, SIGMUND, A.B.....New York	LEFKOWITZ, JACOB, B.S.....New York
FEIN, JACK, B.S.....New York	LEGUM, SAMUEL, A.B.....Maryland
FISHBEIN, ELLIOT, M.S.....New Jersey	LENT, SYLVESTER MEAD, B.S., Connecticut
FLOM, CHARLES, Ph.G.....Maryland	LERNER, GEORGE, A.M.....New York
FRANCE, ANDREW MENARIS, B.S., Maryland	LIEBERMAN, SAMUEL, M.S.....New York
GANZ, SAMUEL EVANS, A.M...New York	LOUFT, REUBEN, A.B.....Maryland
GELLER, SAMUEL, B.S.....New Jersey	MARKMAN, HARRY DAVID, B.S..New York
GERSHENSON, DAVID ABRAHAM, A.B., Maryland	MCCAULEY, LEWIS ROSS, Ph.G., Pennsylvania
	MCGOVERN, WILLIAM JOSEPH, B.S., Pennsylvania
	McMILLAN, WILLIAM OWEN, West Virginia

*Did not complete the year.

FIRST YEAR CLASS—Continued

MICKLEY, JOHN HOKE, B.S..	Pennsylvania	SAUNDERS, THOMAS SEWELL, Ph.G.,	
MILLER, MYRON JOSEPH, A.B..	New York		Maryland
MOORES, JOHN DUER.....	Maryland	SAVAGE, JOHN EDWARD, B.S.,	
MYERS, GEORGE THOMAS, A.B..	Maryland		District of Columbia
MYLES, HARRY SEIG, B.S..	West Virginia	SCHNABEL, WILLIAM THOMAS, Ph.G.,	
NACHLAS, ARTHUR, A.B.....	Maryland		Maryland
NEWMAN, ALPHEUS CARLTON...	Maryland	SCHUBART, GEORGE RUDOLPH, B.S.,	
PANEBIANCO, RICHARD ROBERT, B.S.,			West Virginia
	New York	SCHWARTZ, DAVID ISRAEL, Ph.G.,	
PATTERSON, ROBERT COMPTON,			Maryland
	West Virginia	SENGER, JOSEPH ANTON, Ph.G..	Maryland
PEAR, HENRY ROBERT.....	Maryland	SHACK, MAX HERMAN.....	New Jersey
PHILIP, ARTHUR JAY, B.S.....	New York	SHAW, JOHN JACOB, A.B.....	New Jersey
PINK, SOLOMON HARRIS.....	New Jersey	SIEGEL, SIDNEY LEON.....	New Jersey
*POSEY, CHARLES FRY.....	Pennsylvania	SILVERSTEIN, GEORGE, A.B...	Connecticut
PRIGAL, SAMUEL JEREMIAH, B.S.,		SIMMONS, JOHN FREDERICK...	Maryland
	New York	SMOOT, MARVIN LE ROY...	North Carolina
PROCTOR, SAMUEL EDWARD, A.B.,		SNYDER, JEROME, Ph.G.....	Maryland
	Maryland	SOLLOD, AARON CHARLES, Ph.G..	Maryland
PRUSSACK, SOLOMON, M.S....	New Jersey	*SPELLMAN, EDWARD THOMAS,	
RECKSON, MORRIS MURRAY....	New York		Pennsylvania
RICHARDSON, JACK.....	West Virginia	STATMAN, ARTHUR JAMES....	New Jersey
*ROBERTO, FRANK PAUL, A.B..	Maryland	STEIN, CHARLES, A.B.....	Maryland
ROBERTS, MARION BUTLER, A.B.,		STEPHENSON, FRANK RICHARD..	Maryland
	North Carolina	STRULLY, JOSEPH GEORGE....	New York
ROHM, JACK ZETH.....	Pennsylvania	THOMAS, ROBERT YATES HAINES..	Florida
ROSENTHAL, STEPHEN ISAIAH,		THOMPSON, HARRY GOFF.....	Illinois
	Pennsylvania	*WIDBY, JESSE HOWARD, B.S..	Washington
RUBEN, WILLIAM MERWIN, Ph.G.,		WIRTS, CARL ALEXANDER...	Pennsylvania
	Maryland	YOUNG, ALEXANDER, A.B.....	New York
RUBENSTEIN, ROBERT.....	New Jersey	ZUPNIK, HOWARD LESTER..	Pennsylvania
SAGER, HAROLD.....	New Jersey	ZURAVIN, MEYER HARRY, B.S..	New Jersey

*Did not complete the year.

GENERAL SUMMARY OF STUDENTS ATTENDING THE UNIVERSITY OF MARYLAND

SESSION OF 1928-1929

College of Agriculture.....	141
College of Arts and Sciences.....	582
Extension	6
School of Dentistry.....	384
College of Education.....	147
Extension	116
College of Engineering.....	261
Extension	171
Graduate School.....	105
College of Home Economics.....	51
School of Law.....	257
School of Medicine.....	413
School of Nursing.....	116
School of Pharmacy.....	373
Summer School, 1927, College Park.....	626
Practice School.....	56
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Total	3,805
Duplications	94
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Net Total	3,711

GRADUATES 1929

GRADUATES OF UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE
AND COLLEGE OF PHYSICIANS AND SURGEONS,

JUNE 8, 1929

ACKERMAN, JACOB HAROLD, A.B.,	New York	GOULDMAN, EDWIN FOSTER, B.S.,	Virginia
ALESSI, SILVIO A., Ph.G.,	Maryland	GUIGLIA, SASCHA FACCHETTI,	New York
AMOS, HUGH, B.S.,	Ohio	HANEY, JOHN JAMES,	New Jersey
ANDERSON, WALTER ANDERS, D.D.S., Ph.G.,	Maryland	HECK, LEROY SAVIN, B.S., Ph.G.,	Maryland
BARDFELD, BENJAMIN B.,	New Jersey	HELMS, SAMUEL THOMAS, B.S.,	Virginia
BARLAND, SAMUEL, JR., B.S.,	New York	HOLROYD, FRANK JACKSON, A.B., B.S.,	West Virginia
BERNHARD, ROBERT,	New York	HOROWITZ, MORRIS, A.B.,	Massachusetts
BIRELY, MORRIS FRANKLIN, A.B.,	Maryland	HUSTED, SAMUEL HARLEY,	New Jersey
BONGIORNO, HENRY DOMENIC, Ph.G.,	New Jersey	ISERN, RAFAEL ANGEL VILAR, B.S.,	Porto Rico
BOTSCH, BERNARD, B.S.,	Ohio	JACKSON, MURRAY ELLIOT, B.S.,	New York
BOWEN, JAMES POORE, B.S.,	South Carolina	JACOBS, ABRAHAM, B.S.,	New York
BRAHMS, MAX, B.S.,	New York	KELLY, CLYDE ERNEST, A.B.,	Pennsylvania
BRAUER, SELIG LEO,	New Jersey	KENDALL, BENJAMIN HORTON, A.B.,	North Carolina
CALAS, ANDRES ELADIO,	Cuba	KNIGHT, WALTER PHILLIPS,	Pennsylvania
CHAMBERS, EARL LEROY,	Maryland	LEVI, ERNEST, Ph.G.,	Maryland
CHAPMAN, WILLIAM HARDEE,	Maryland	LEVY, WALTER HOWARD,	New York
CHRISTIAN, WILLIAM,,	Pennsylvania	LYNN, IRVING, B.S.,	New Jersey
CICCONE, ARNOLD WILLIAM,	Rhode Island	LYNN, JOHN GALLOWAY, 4th	
CLARK, FRANCIS ALDEN, B.S.,	West Virginia	MATSUMARA, JUNICHI,	Hawaii
COHEN, HERMAN,	New Jersey	MCANDREW, JOSEPH THEODORE,	West Virginia
COHEN, PAUL HENRY, A.B.,	Maryland	MCDOWELL, ROY HENDRIX, A.B.,	North Carolina
CONN, JACOB HARRY, A.B.,	Maryland	MCGOWAN, JOSEPH FRANCIS,	Pennsylvania
CORSELLO, JOSEPH NICHOLAS, B.S.,	New York	MERANSKI, ISRAEL PETER, B.S.,	Connecticut
DAILEY, WILLIAM PAUL,	Pennsylvania	MORGAN, ISAAC JOSEPH, B.S.,	Pennsylvania
DANIELS, WILLARD FLOYD, B.S.,	West Virginia	MURPHY, JOHN EDWARD,	Pennsylvania
DEBARBIERI, FRED LOUIS, A.B.,	Pennsylvania	NEISTADT, ISIDORE IRVING, A.B.,	Maryland
DRAPER, WILLIAM BATEMAN,	Maryland	NEUMAN, FQNLLEY FREDERICK, A.B.,	Ohio
FARMAN, MEYER DAVID, B.S.,	New York	NEWMAN, SAUL CHARLES, B.S.,	Connecticut
FARGO, WILLIAM RUSSELL, A.B.,	Maryland	NICKMAN, EMANUEL HARRISON,	New Jersey
FATTEL, HENRY CHARLES, B.S.,	New Jersey	OVERTON, LEWIS MARVIN, A.B.,	North Carolina
FEINGOLD, CHARLES RODIN, B.S.,	New York	PENCHANSKY, SAMUEL JOSEPH, B.S.,	New Jersey
FEIT, EMANUEL, B.S.,	New York		
FIFER, JESSE SHOWALTER, A.B.,	Delaware		
GARBER, JACOB S.,	New York		
GIVNER, DAVID, A.B.,	Maryland		

PORTERFIELD, MAURICE COLEMAN,		SPENCER, ERNEST,	Maryland
	Maryland	SPURRIER, OLIVER WALTER, A.B.,	
PRAGER, BENJAMIN, B.S.,	New York		Maryland
REEDER, PAUL ABLINGTON, B.S.,		STATON, LEON RAPHAEL, A.B.,	
	West Virginia		North Carolina
REILLY, JOHN VINCENT,	New Jersey	STEVENSON, CHARLES CALVERT,	Utah
ROBERTS, ELDRED, B.S.,	Maryland	SULLIVAN, WILLIAM JOSEPH,	Rhode Island
SAFER, JAKE VICTOR,	Florida	TANNENBAUM, MORRIS, B.S.,	New York
SAFFORD, HENRY TOWNE, JR.,	Texas	TAYLOR, CHARLES VIVIAN, A.B.,	Maryland
SCHREIBER, MORRIS BERNARD,	New York	ULLRICH, HENRY FRANZ	Maryland
SCHWARTZBACH, SAUL, A.B.,		VANN, HOMER KING,	Florida
	District of Columbia	VESTAL, TOM FLETCHER,	North Carolina
SEIBEL, JACK, B.S.,	New York	VOLENICK, LEE JOSEPH,	New York
SEKERAK RAYMOND ANDREW,	Connecticut	WALLACK, CHARLES ALBERT, B.S.,	
SERRA, LAWRENCE MARIO, Ph.G.,			New Jersey
	Maryland	WARD, HUGH WALTER, A.B.,	Maryland
SIKORSKY, ALBERT EDWARD, A.B.,		WATERS, ZACK JAMES, B.S.,	
	Maryland		North Carolina
SILVER, MABEL IRENE, B.S.,	Maryland	WEISS, AARON,	New York
SOIFER, ALBERT ALEXANDER, B.S.,		WILKERSON, ALBERT RUSSELL, Ph.G.,	
	Maryland		Maryland
SOLOMON, MILTON, B.S.,	New York	YEAGER, GEORGE HEESCHEL, B.S.,	
SPICHER, WILBUR GLENN,	Maryland		Maryland
		YUDKOFF, WILLIAM, B.S.,	New Jersey

The following men graduated on October 1st, 1928:

ISRAEL KAUFMAN

S. ZACHARY VOGEL

Honors

University Prize Gold Medal.....WILLIAM RUSSELL FARGO

Certificates of Honor

LAWRENCE MARIO SERRA

SAMUEL THOMAS HELMS

OLIVER WALTER SPURRIER

PAUL HENRY COHEN

MAURICE COLEMAN PORTERFIELD

The Dr. Jose L. Hirsh Memorial Prize of \$50.00 for the best work in Pathology during the second and third years was awarded to William Russell Fargo.

The Dr. Leo Karlinsky Memorial Scholarship for the highest standing in the Freshman Class was awarded to Herbert Berger.

The Dr. A. Bradley Gaither Memorial Prize of \$25.00 for the best work in Genito-Urinary Surgery during the senior year was awarded to Zack James Waters.

ALUMNI ASSOCIATION SCHOOL OF MEDICINE

Executive Officers

President, Dr. ALEXIUS MCGLANNAN—115 W. Franklin St.
 Vice President, Dr. ELMER B. FREEMAN—412 Cathedral St.
 Vice President, Dr. ALOYSIUS W. VALENTINE—610 N. Caroline Ave., Wash., D.C.
 Vice President, Dr. WM. WAYNE BABCOCK—1720 Spruce St., Phila., Pa.
 Secretary, Dr. H. M. BUBERT—Medical Arts Bldg.
 Assistant Secretary, Dr. T. B. AYCOCK—Medical Arts Bldg.
 Treasurer, Dr. M. LEROY LUMPKIN—914 N. Charles St.

Board of Directors

Chairman of Board, Dr. C. R. EDWARDS, Medical Arts Building.
 President, Dr. ALEXIUS MCGLANNAN
 Secretary, Dr. HOWARD M. BUBERT
 Assistant Secretary, Dr. T. B. AYCOCK
 Treasurer, Dr. M. L. LUMPKIN
 2 year member, Dr. JOS. W. HOLLAND
 2 year member, Dr. FRANK S. LYNN
 1 year member, Dr. AUSTIN WOOD
 1 year member, Dr. CHAS. R. FOUTZ

(To keep a nucleus of 3 intact, President becomes Chairman for this year then two year Members each year.)

Advisory Committee

Dr. WM. H. TRIPLETT, Chairman—1324 W. Lombard St.
 Dr. A. FERD REIS—24 S. Broadway
 Dr. JOHN EVANS, Medical Arts Bldg.
 Dr. CHARLES A. WATERS—1100 N. Charles St.
 Dr. S. DEMARCO—1604 Linden Ave.

Representative on Alumni Council, Dr. CYRUS HORINE—817 Park Ave.

Representatives on Hospital Council

Dr. FRANK W. KEATING—Owings Mills, Md.
 Dr. CHARLES W. MAXSON—827 N. Charles St.

Trustees Students Rotating Fund

5 year term, Dr. WM. S. LOVE 2 year term, Dr. ROBERT L. MITCHELL
 4 year term, Dr. CHAS. E. BRACK 1 year term, Dr. G. MILTON LINTHICUM
 3 year term, Dr. FRANK J. KIRBY

(Upon expiration all elections will be for 5 year terms. Thus 1 elected each year.)

Editors Bulletin

Dr. EMIL NOVAK—26 E. Preston St.
 Dr. H. M. BUBERT—Medical Arts Bldg.

Necrologist, Dr. WM. S. LOVE—836 W. North Ave.

ENDOWMENT FUND

The following constitute the Board of Trustees of this Fund:

DANIEL BAKER, JR., Chairman.

HARRY ADLER, M.D.

J. M. H. ROWLAND, M.D.

RANDOLPH WINSLOW, A.M., M.D., LL.D.

ARTHUR M. SHIPLEY, Sc.D., M.D.

STUART JANNEY

E. F. KELLY, Ph.G.

HOBACE M. DAVIS, D.C.D.

ROBERTSON GRISWOLD

This Board is incorporated by act of the Legislature of the State, its legal title being "The Trustees of the Endowment Fund of the University of Maryland," and is independent and self-perpetuating. Its powers are limited *to the expenditure of the interest derived from the fund*, which is to be applied in the discretion of the Board for the benefit of the University. Contributions, donations and bequests are solicited from Alumni and friends. They may be made to the general or University Fund, to the Medical Fund or to any other department of the University. If intended for the School of Medicine, they may be given to the general medical fund or to some special object, as building, research, library, pathology, hospital, publication, laboratories, gymnasium, scholarship, medal prize, etc., in which case the wishes of the donor will be strictly regarded. Attention is invited to the "Charles Frick Research Fund," already established in memory of that distinguished investigator. Checks should be made payable to J. M. H. Rowland, Treasurer, Lombard and Greene Streets, Baltimore, Md.

FORMS OF DEVISE OR BEQUEST

To School of Medicine

I give, devise and bequeath to the Regents of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic.....

(Here state amount or describe property)

To Endowment Fund

I give, devise and bequeath to the Trustees of the Endowment Fund of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic.....

(Here state amount or describe property)

THE UNIVERSITY OF MARYLAND

SCHOOL OF NURSING

FACULTY AND INSTRUCTORS

Superintendent of Nurses and Director of School of Nursing

ANNIE CRIGHTON, R.N.

Assistant Superintendent of Nurses

FRANCES M. BRANLEY, R.N.

Instructor in Nursing

ISABEL ZIMMERMAN, R.N.

Instructor in Nursing and Supervisor of Wards

HELEN WRIGHT, R.N.

*Instructor in Surgical Technique for Nurses and
Supervisor of Operating Pavilion*

ELIZABETH AITKENHEAD, R.N.

Instructor in Dietetics

MIRIAM CONNELLY

Instructor in Massage

EDITH WALTON

Instructor in Social Service

GRACE PEARSON, R.N.

Assistant Instructor in Nursing and Supervisor of Wards

BERTHA HOFFMAN, R.N.

ALICE BENNETT, R.N.....	Night Supervisor
JANE MOFFATT, R.N.....	Supervisor—Dispensary
LILLIE HOKE, R.N.....	Head Nurse—Obstetrical Ward
ESTELLA BALDWIN, R.N.....	Head Nurse—Children's Ward
HELEN J. MORGART, R.N.....	Head Nurse—Men's Medical Ward
ELIZABETH CANNON, R.N.....	Head Nurse—Men's Surgical Ward
GERTRUDE CONNER, R.N.....	Head Nurse—Men's Surgical Ward
MARIE PEARCE, R.N.....	Head Nurse—Women's Medical Surgical and Gynecological Ward
LUCY BRUDE, R.N.....	Head Nurse—Private Hall
VADA SMITH, R.N.....	Head Nurse—Private Hall
RHEA GERBER, R.N.....	Assistant Head Nurse—Operating Room
COBA MASON WILSON, R.N.....	Head Nurse—Surgical Supply Room
FRANCES LEISHEAR, R.N.....	Head Nurse—Accident Room
MILDRED CROLL, R.N.....	Head Nurse—Outside Obstetrics
RUTH YOUNG, R.N.....	Assistant Oustide Obstetrics
CATHERINE RODENWALD, R.N.....	Head Nurse—Prenatal Clinic
STELLA RICKETTS, R.N.....	Assistant Prenatal Clinic

LECTURERS FROM THE SCHOOL OF MEDICINE

Anatomy

C. L. DAVIS, M.D.

Physiology

F. A. RIES, M.D.

Bacteriology

F. W. HACHTEL, M.D.

Chemistry

RUTH F. CARR, B.S.

Pharmacology and Materia Medica

RUTH MUSSEY, B.A.

W. H. SCHULTZ, Ph.B., Ph.D.

Medicine

MAURICE C. PINCOFFS, M.D.

L. A. M. KRAUSE, M.D.

W. S. LOVE, JR., M.D.

V. L. ELLICOTT, M.D.

C. HAMPSON JONES, M.D.

Pediatrics

C. LOBING JOSLIN, M.D.

Psychiatry

R. McCLURY CHAPMAN, M.D.

Skin and Venereal Diseases

HARRY M. ROBINSON, M.D.

Ophthalmology

CLYDE A. CLAPP, M.D.

Otology

J. W. DOWNEY, M.D.

Surgery

JOSEPH W. HOLLAND, M.D.

Laryngology and Rhinology

E. A. LOOPER, M.D.

Gynecology

HUGH BRENT, M.D.

Orthopaedic Surgery

ROBERT W. JOHNSON, JR., A.B., M.D.

Obstetrics

L. H. DOUGLASS, M.D.

Social Service

Special Lectures

STUDENTS ENROLLED, 1927-1928.

Post-graduates	1
Seniors	32
Intermediates	20
Juniors and Preparatory.....	49
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Total	102

GENERAL STATEMENT

The University of Maryland School for Nurses was established in the year 1889.

Since that time it has been an integral part of the University Hospital, coming under the same government.

The school is non-sectarian, the only religious services being morning prayers.

The University Hospital is a general hospital containing about 250 beds. It is equipped to give young women a thorough course of instruction and practice in all phases of nursing, including experience in the operating room.

The school offers the student nurse unusual advantages in its opportunity for varied experience and in its thorough curriculum taught by best qualified instructors and members of the Medical Staff of the University.

ADMISSION—Requirements: In order to become a candidate for admission to the Training School, application must be made in person or by letter, to the Superintendent of Nurses. An application by letter should be accompanied by a statement from a clergyman testifying to good moral character and from a physician certifying to sound health and unimpaired faculties. No person will

be considered who is not in a good physical condition between the ages of 18 and 35. She must also show that she has a High School education or its equivalent. This is the minimum requirement, as women of superior education and culture are given preference provided they meet the requirements in other particulars.

The fitness of the applicant for the work and the propriety of dismissing or retaining her at the end of her term of probation, is left to the decision of the Superintendent of Nurses. Misconduct, disobedience, insubordination, inefficiency, or neglect of duty are causes for dismissal at any time by the Superintendent of Nurses, with the approval of the President of the University.

TIME: Students are admitted in February and September.

HOURS ON DUTY: During the probation term the students are on duty not more than six hours daily. During the Junior, Intermediate and Senior years the students are on eight-hour day duty, with six hours on Sunday and Holidays, and ten-hour night duty. The night duty periods are approximately five or six months during the three years.

SICKNESS: A physician is in attendance each day, and when ill, all students are cared for gratuitously. The time lost through illness in excess of two weeks during the three years must be made up. Should the authorities of the school decide that through the time lost the theoretical work has not been sufficiently covered to permit the student to continue in that year, it will be necessary for her to continue her work with the next class.

VACATION: Vacations are given between June and September. A period of three weeks is allowed the student at the completion of the first year and four weeks at the completion of the second year.

EXPENSE: A student receives her board, lodging, and a reasonable amount of laundry from the date of entrance. During her period of probation she provides her own uniforms made in accordance with the hospital regulations. After being accepted as a student nurse, she wears the uniform furnished by the hospital, and in addition to this is paid five dollars (\$5.00) a month. Her personal expenses during the course of instruction and training will depend entirely upon her individual habits and tastes.

GENERAL PLAN OF INSTRUCTION

The course of instruction covers a period of three years.

FRESHMAN YEAR

First Term

The Freshman Year is divided into two periods. The first term is the preparatory period (4 months) and the second the junior term.

In the preparatory term the student is given practical instruction in:

- I. The making of hospital and surgical supplies. The cost of hospital materials, apparatus and surgical instruments.
- II. Household economics and the preparation of foods.
- III. The hospital out-patients' department and dispensary.

During this term the practical work is done under constant supervision, and teaching is given correlatively.

Excursions are made to markets, hygienic dairies, linen-rooms, laundry and store-room.

The maximum number of hours per week in formal instruction divided into laboratory and lecture periods is thirty hours and includes courses in Anatomy and Physiology, Dietetics, Materia Medica, Personal Hygiene, Drugs and Solutions, Household Economics, Short Course in Ethics and History of Nursing.

At the close of the first term of the Junior Year the students are required to pass satisfactorily both the written and oral tests, and failure to do so will be sufficient reason to terminate the course at this point.

SUBSEQUENT COURSE

The course of instruction, in addition to the probationary period, occupies two and one-half years, and students are not accepted for a shorter period.

After entering the wards, the students are constantly engaged in practical work under the immediate supervision and direction of the head nurses and instructors.

FRESHMAN YEAR

Second Term

During this period the students receive theoretical instruction in Massage, Bacteriology, General Surgery and Introductory Medicine. Practical instruction is received in the male and female, medical, surgical, and children's wards.

JUNIOR YEAR

During this period the theoretical instruction includes Pediatrics, General Medicine, Infectious Diseases, Obstetrics, Gynecology and Orthopaedics. The practical work provides experience in the nursing of obstetrical and gynecological patients, in the operating-rooms and the out-patient department.

SENIOR YEAR

During this period the student receives short courses of lectures on subjects of special interest. This includes a consideration of the work of institutions of public and private charities, of settlements, and various branches of professional work in nursing.

Experience is given in executive and administrative work to those showing exceptional ability in the Senior Year. With these students conferences are held on administration and teaching problems.

EXAMINATIONS—Which are both written and oral—include practical tests, and the standing of the student is based upon the general character of work throughout the years, as well as the results of the examinations. Students must pass all subjects before entering upon the work of the following year.

GRADUATION: The diploma of the School will be awarded to those who have completed satisfactorily the full term of three years and have passed successfully the final examinations.

SCHOLARSHIPS: One scholarship has been established by the Alumnae of the Training School. It entitles a nurse to a six weeks' course at Teachers' College, New York. This scholarship is awarded at the close of the third year to the student whose work has been of the highest excellence, and who desires to pursue post-graduate study and special work. There is a second prize of fifty dollars, known as the Elizabeth Collins Lee prize, which is awarded at the close of the third year to the student whose work has been of the second highest excellence. A third prize of fifty dollars, known as the Edwin & Leander M. Zimmerman prize, which is also awarded at the close of the third year to the student whose practical work has been outstanding and who has displayed the greatest interest and sympathy for the patients.

An Alumnae Pin is presented by the Women's Auxiliary Board to the student who at the completion of three years shows exceptional executive ability.

Five-Year Program

In addition to the regular three-year course of training the University offers a combined Academic and Nursing program leading to the degree of Bachelor of Science and a Diploma in Nursing.

The first two years of the course (or pre-hospital period), consisting of 68 semester hours, as shown on page 94 of the University Catalogue, are spent in the College of Arts and Sciences of the University, during which period the student has an introduction to the general cultural subjects which are considered fundamental in any college training. At least the latter of these two years must be spent in residence at College Park in order that the student may have her share in the social and cultural activities of college life. The last three years are spent in the School of Nursing in Baltimore or in the Training School of University Hospital, which is affiliated with the School of Medicine of the University. In the fifth year of the combined program certain elective courses such as Public Health Nursing, Nursing Education, Practical Sociology, and Educational Psychology are arranged.

GRADUATING CLASS OF 1929

EVA MAE BRADBURN.....North Carolina
 GERTRUDE NELSON CONNER.....Maryland
 MILDRED M. COULTER.....North Carolina
 GRACE ELEANOR DICK.....Maryland
 GRACE MAE EMMERT..District of Columbia
 EDNA ALYCE ESTERLY.....Maryland
 FREDERICK GERTRUDE FAZENBAKER...Maryland
 LIDA JANE FITE.....Pennsylvania
 MARGARET MILTON FOX.....Maryland
 CHRISTINA BAIRD GILLIES,
 Jamaica, B. W. I.
 ELEANORE EDITHA GOLDSBOROUGH,
 West Virginia
 HATTIE G. GOODMAN.....Maryland
 DAISYMAE HASTINGS.....Maryland
 EVELYN C. HADDOX.....West Virginia
 GERTRUDE C. McLAUGHLIN..West Virginia

CORINNE BENNETT MILLER.....Maryland
 EDITH EUGENIA MORGAN...North Carolina
 MILBREY CATHERINE NEIKIRK...Maryland
 MARGARET NELSON.....Maryland
 MARTHA REBECCA PIFER.....Virginia
 MILDRED NANCY RANKIN..North Carolina
 EMMA ELIZABETH ROTH.....Maryland
 MILDRED MAE SHIPLEY.....Maryland
 VESTA LILLIAN SWARTZ.....Virginia
 GRACE LIDEN THAWLEY.....Maryland
 DENA VIRGINIA VALACO.....Maryland
 ALBERTA LILLIAN VICTOR.....Maryland
 LARUE KOONTZ WETZEL.....Maryland
 HILDA DALE WILLIS.....North Carolina
 KATHRYN ELIZABETH WRIGHT...Maryland
 RUTH ANNA YOUNG.....Maryland
 EVELYN BYRD ZAPF.....Maryland

MERCY HOSPITAL SCHOOL OF NURSING

The Mercy Hospital School of Nursing was established in 1899 and incorporated in 1901. It has developed the art of the profession according to the high standard requisite to qualify for Registered Nurse.

The Mercy Hospital School of Nursing was organized and incorporated under the laws of the State of Maryland in 1899, and has operated successfully for a quarter of a century.

Requirements for Admission.

A candidate desiring to enter the School of Nursing should apply to the Superintendent of Nurses by letter or in person at least six weeks before the entrance date. It is preferred that she apply in person accompanied by her mother or guardian. If a personal interview is not possible, a written application may be submitted.

Age.

Candidates should be between the ages of eighteen and thirty-five years.

Physique.

Applicants should be of average height and good physique. Teeth and eyes should be attended to before entering the School, and tonsils removed if not in good condition. Every applicant is required to send in a certificate of health by her family physician. A physical examination is also made by the school physician during the preliminary period.

Education.

Applicants for admission should present at least high school certificate of graduation or its equivalent in educational values. The credits of preliminary education are fully accounted and the nurse who is the better qualified finds such a foundation more to her advantage as she progresses through the years of study.

Calendar.

Students are admitted September 1st and February 1st.

Length of Course.

The course of instruction covers three years. It is divided into a preliminary term of four months, a freshman term of eight months, a junior term of one year, and a senior term of one year.

Conditions of Acceptance.

The Superintendent of Nurses decides as to the fitness for the work and the propriety of retaining or dismissing a student at the end of the term of probation or during its course. She may also, with the approval of the faculty, terminate the connection of a student with the School in any justifiable instance. At the end of the preliminary period, if the student's health, general education, and natural aptitude prove satisfactory to the Director of the School and the Sister Superior, she shall be appointed for enrollment as a student nurse.

Expenses.

An admission fee of fifty dollars is required from all students. This covers the cost of uniforms and books required during the preliminary course.

Should the student for any reason leave the school before completing the course, this fee will not be returned, nor may she take with her any part of the equipment.

After four months' probation, candidates, if they possess the necessary qualifications, are admitted to the School of Nursing proper. They receive ten dollars per month to help defray incidental expenses. No compensation is given, the education received being considered sufficient return for service rendered. Board, laundry, etc., are furnished by the institution.

Four weeks before admission candidates should forward the fifty-dollar entrance fee, and measurements for uniforms and aprons, which will be in readiness upon their arrival. No orders will be considered until this fee is received.

Uniform Equipment.

After acceptance students are required to wear the uniform of the School. They are not permitted to appear on the street away from the hospital in uniform at any time.

A list of the necessary articles of clothing and other equipment will be sent to each accepted candidate for admission.

Hours of Duty.

During the preparatory period of four months, the students are on duty in the Wards not more than four hours daily.

During the freshman, junior, and senior years, the number of hours of duty does not exceed eight hours during the day and ten hours during the night. One-half day off duty is given each week. Students on night duty are given one night off each week and two days at the end of each night duty period.

Vacations.

Vacations are given between May 15th and October 1st, and at no other time. Students are granted four weeks' vacation at the end of the first and second years. Absence other than this is not allowed, except in extreme cases. Students are not allowed during their

course of instruction to return to their homes to care for sick relatives or friends, or absent themselves for other personal reasons.

Illness.

Students who are ill are cared for at the expense of the Hospital for a reasonable length of time. Members of the Medical Staff of the Hospital give professional service gratuitously to students of the School of Nursing. Time lost from illness or for other reasons must be made up. Absences are allowed for emergencies only. If absence is prolonged, students may lose their class position.

Examinations.

Examinations, both written and oral, are held at the end of the course of instruction in each subject. These examinations include practical tests. The standing of the pupil is based upon the general character of her work throughout the year, as well as upon the results of her examinations. Pupils are required to pass in all subjects of a given year before entering upon the work of the following year. Careful and complete records of class work, of examinations, and of the general deportment of all pupils are kept on file in the School office.

Graduation.

The diploma of the School will be awarded to those who have completed satisfactorily the full term of three years and have passed successfully the final examinations.

THE FIVE-YEAR COURSE

Leading to B.S. Degree and Diploma of Graduate Nurse

The University of Maryland, in affiliation with the Mercy Hospital School of Nursing, offers a combined Academic and Nursing program.

The completion of this course entitles the student to the degree of Bachelor of Science from the University of Maryland, and to the diploma of the Mercy Hospital School of Nursing.

Graduate nurses who hold college degrees are greatly in demand, especially for positions in administration and teaching. This program consequently offers a distinct advantage.

Outline of Course.

Two years of this course (pre-nursing or post-nursing period) consisting of 70 semester hours are spent in the College of Arts and Sciences of the University, with the usual College vacations. At least the latter of these two years must be spent in residence at College Park in order that the student may have her share in the social and cultural activities of College life.

Requirements for Admission.

Students electing such a course must before entering the School of Nursing, satisfy the entrance requirements of the University of Maryland. Applicants must be personally adapted to professional nursing.

Fees and Other Expenses.

During the two years which the students spend at College Park they maintain themselves, and pay their own College fees. (See University of Maryland bulletin.)

Throughout the Nursing School Course the hospital provides without expense to the student maintenance and care during temporary illness.

GRADUATES 1929

SISTER MARY MAGDALENE BAKER,
Newfoundland
ADA RAMSAY BARTOL.....Maryland
SOPHIA CHRISTITA BOCKMIER...Maryland
DOROTHY MARIE BOHN.....Maryland
HELEN LOUISE BOSTION.....Maryland
FRANCES MECHEM CAIN.....Maryland
ANNA ELIZABETH CASEY....West Virginia
JESSIE SHEETS CHENOWETH....Maryland
RUTH EVELINE COVENEY.....Maryland
SISTER MARY DELPHINE DIETL,
New Jersey
ANNE STUART DUCHARME.....Maryland
GERTRUDE ESTELLE DUGGAN..Newfoundland
ANNA LOUISE GOLIBART.....Maryland
MARY JUDITH HAYNES.....Maryland
ELIZABETH AUGUSTA HAUF....Maryland
MARY DOROTHY HORIGAN.....Maryland
CATHERINE IRENE JOHNSON....Maryland
GERALDINE MARGARET LEAHEY,
Pennsylvania

SISTER MARY LORETTO MACISAAC,
Newfoundland
DELIA MACKEN.....Ireland
EILEEN M. MANSUR.....Maryland
HELEN MARIE MILLER.....Vermont
MARIAN RUTH MOYER.....Pennsylvania
MARY AGNES MURPHY.....Pennsylvania
LILLIE BARBARA MUZDAKIS.....Maryland
CATHERINE EUGENIA O'HAYER...Maryland
ELEANOR MAUDE RICE.....Pennsylvania
MARTHA BERTHA SIMON.....Maryland
MARY EDITH SMITH.....Maryland
LORRAINE ENMA SMALING...Pennsylvania
ANNA MARIE SONGER.....Pennsylvania
MARY ROSALIE SHETLA.....Maryland
HELEN CHRYSTAL TREACY.....Maryland
ELEANOR JENKINS TROY.....Maryland
HELEN M. A. VOLLMER.....Maryland
ELIZABETH MARGARET WARRENFELTZ,
Pennsylvania



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EXOPHTHALMIC GOITER*

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ROCHESTER, MINNESOTA

Exophthalmic goiter, as a definite clinical entity, was first described by Parry in 1829. Subsequently, Graves, in 1836, and Basedow, in 1840, published descriptions of this type of goiter. The result was that their names have been constantly associated with the disease until the present time. Although prior to this time no definite contributions, clinical or otherwise, had been made to the history of goiter, investigations have proved distinctly that as far back as Galen, references were made to changes in the thyroid gland which resulted in definite pathologic processes. Following Galen, a century elapsed before Realdus Columbus, in 1562, noted the fact that the thyroid gland was relatively larger in women than in men, and even later, about 1600, Casserius first described this gland as a single, separate organ. The distinction of goiter from other tumors of the neck, and a description of the pathologic changes and the clinical syndrome associated with dysfunction of the thyroid gland are associated with such names as von Haller, Morgagni, Porta, and others of early centuries.

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† University of Maryland, Class of 1909.

In our own country, up to 1883, only forty-five operations for goiter had been recorded, and in this series five deaths had resulted. Nathan R. Smith, Maury, Halsted, Crile and C. H. Mayo, along with Kocher and de Quervain, have been responsible for the modern technical maneuvers which have placed the surgical extirpation of this gland in the category of safe and standard therapeutic measures for the relief of hyperthyroidism. The research activities of Kendall, Baumann, Marine and others have added to our knowledge of the function of the thyroid gland and the nature of its activating agent. To Plummer we are indebted for the differentiation of hyperfunctioning adenomatous goiter and exophthalmic goiter and for the standardization of the preoperative preparation of the patient with the latter type of condition by the administration of an adequate amount of compound solution of iodine. Kendall, in 1914, discovered thyroxine. Baumann, in 1896, had discovered that iodine was a normal constituent of the thyroid gland, and had demonstrated that the presence of iodine in the thyroid glands of animals was constant and, after removal of iodine from their diet, compensatory hypertrophy of their thyroid glands took place. Further, he showed that the content of iodine of the thyroid gland is directly proportional to the amount of colloid stored in it and that in the colloid goiter the percentage of iodine is relatively less than that found in a normal thyroid gland. With the discovery of thyroxine, the hypothesis was advanced that it is employed as a catalytic agent in the process of oxidation, and that it is active in all or nearly all of the cells of the body. Its physiologic and chemical properties bear out this hypothesis. Further, it is assumed that a function of the thyroid gland is the delivery to the tissues, daily, of a certain amount of thyroxine, and that the amount varies distinctly with the metabolic activity. Besides this function, unquestionably the thyroid gland has many other relatively unknown duties.

The pathologic changes in exophthalmic goiter are strikingly uniform in their characteristic evidences of diffuse parenchymatous hypertrophy, hyperplasia, and increased vascularity and, later, in the increase in the stroma of the gland. The cells lining the acini differ markedly in different glands, and often in the same gland there is a change in type from cuboidal to columnar cells. Likewise, the colloid material normally present in the acini is less than that in the normal

gland and often may be entirely absent. Grossly, the gland usually is enlarged, and there is great increase in vascularity due to the increase in size and number of vessels and to the ready anastomosis between the superior and inferior thyroid arteries. The size of the gland, however, is not an accurate index of its activity; some of the smaller glands are accompanied by the most extreme intoxication both from the clinical standpoint and from the standpoint of elevation of the basal metabolic rate. The meaty, red, friable goiter, uniformly enlarged on both sides, and frequently in the isthmus, too, may be hugely increased in size or increased to only one or two times its normal size. The increase produced by the hyperthyroidism in all the structural elements of the gland is readily changed by the administration of iodine, which presumably changes its type of secretion.

DIAGNOSIS

Given a frank exophthalmic goiter, there is usually small question of the diagnosis in the hands of the average clinician. However, with the probable increase in exophthalmic goiter, a condition which is not easily proved but which I believe to be true, and with the earlier appearance of these patients for diagnosis, together with the confusion which sometimes arises in the differentiation of hyperthyroidism from other conditions closely simulating it, the diagnosis is not always apparent and frequently is difficult. Nevertheless, the hyperthyroidism which is the result either of hyperfunctioning adenomas in the thyroid gland or which is the result of the exophthalmic variety of the disease, presents pathognomonic characteristics differing in details in certain cases and demanding individualization in treatment, both preoperative and operative. The fact that the etiology of the disease is still in doubt does not complicate its treatment. Whether or not the condition is thyrogenic or extrathyrogenic is still unknown; nevertheless, the hypothesis that exophthalmic goiter is associated with an unknown stimulus to the thyroid gland which results in the secretion of two products, one of which is an abnormal type of secretion and the other an excess of thyroxine, the normal product of the gland, is the most acceptable.

It is well known that the disease progresses usually by exacerbations and remissions and that there is an occasional tendency for it to cease spontaneously after running a definite course, ranging from a few months to many years in certain cases. Likewise, the clinical

phenomena which are associated with this hyperthyroid state, namely, exophthalmos, stare with or without exophthalmos, gastro-intestinal crises associated with nausea and vomiting, the psychic state characterized by irritability and useless, purposeless motions, loss of weight, and an increased metabolic rate, are familiar to all clinicians and surgeons. In case of hyperfunctioning adenomatous goiter one finds those symptoms which may be attributed directly to increased metabolism and which may be reproduced by the introduction of quantities of desiccated thyroid extract in the food or by the intravenous administration of thyroxine. The presence or absence of adenomas in the gland, from a practical standpoint, should be presumptive evidence for or against the diagnosis of exophthalmic goiter. However, in about 20 per cent of the cases at The Mayo Clinic, adenomas are found in the gland in the cases of exophthalmic goiter. Other symptoms, such as bruits over the superior thyroid vessels, are almost always present in well established cases of exophthalmic goiter but bruits over the superior thyroid vessels must be distinguished from lesions of the aortic valves, from bruits due to arterial compression and from those due to colloid adenomatous goiters seen in adolescent persons. Characteristic changes in finger nails and toe nails that are found in patients with exophthalmic goiter frequently are of assistance in establishing the diagnosis. The nails are often entirely or partly separated from the nailbed, and occasionally the outer edges turn up.

The establishment of the diagnosis of exophthalmic goiter, and the differentiation of this condition from hyperfunctioning adenomatous goiter are essential both from the standpoint of preoperative treatment and from that of the selection of time for operation. The differentiation of exophthalmic goiter from a number of other conditions is necessary and of these, chronic nervous exhaustion (a state not of intoxication but of lack of assurance), neurasthenia, and the various types of neurosis, are the most common. In the differentiation of exophthalmic goiter and neurosis, the basal metabolic rate may be of primary importance in establishing the correct diagnosis. Frequently several estimations on successive days may be necessary before the patient is found to be completely at rest during the test. It is a common occurrence in this type of person for the metabolic rate on successive days to vary, and consequently several readings may be essential to establish an accurate "basal" reading.

The administration of iodine to such patients is probably the most valuable test in establishing the diagnosis, response to which in cases of exophthalmic goiter with cessation of the various nervous manifestations, occasionally essential hypertension, Parkinson's disease, and other clinical entities, must be accurately distinguished from hyperthyroidism. In another group of cases, namely, emergency cases in which patients with extreme prostration and cardiovascular disturbance are admitted without characteristic ocular signs of exophthalmic goiter and a history of short duration, frequently the clinician is tested highly to rule out or to establish the presence of a state of hyperthyroidism. In such an instance unquestionably the practicable and sensible procedure is to suspect hyperthyroidism and to treat the patient for hyperthyroidism by the administration of large quantities of compound solution of iodine. In the event that the diagnosis proves to be hyperthyroidism, rapid cessation and disappearance of the toxic state, with return to a physiologic balance, will be the reward. If one adheres dogmatically to the hypothesis of secretion of two products of the thyroid gland in exophthalmic goiter, it is essential to administer adequate amounts of Lugol's solution (compound solution of iodine) in the preoperative preparation of these patients for resection. On the other hand, the reverse is true in hyperfunctioning adenomatous goiter. From a practical standpoint, however, it is not essential that one adhere too rigidly to this dictum and it has been found advisable in The Mayo Clinic to use small doses of iodine as a differential determining factor in establishing diagnosis. The small amount used has no ill effect and lack of improvement in the presence of adenomas contraindicates its continued use.

PREOPERATIVE PREPARATION

The standardization of preoperative preparation, which was begun by Plummer at The Mayo Clinic in 1922, has resulted in the most spectacular and satisfactory changes in the surgical treatment of exophthalmic goiter, an accompanying huge reduction in mortality and morbidity, practically complete abandonment of preliminary ligations and other graded procedures, and absolute control of the dreaded postoperative hyperthyroid crises which not infrequently accompanied operation. By individualization of patients in a single unit under coöperative management, standardization of preoperative

care was directed mainly along three lines: (1) introduction of adequate amounts of iodine in the form of Lugol's solution; (2) the establishment of definite rest, and (3) the administration of a high calorie diet. As patients with goiter appear now at an earlier period in the disease, it seems less and less mandatory that the preoperative preparation as a routine consists of hospitalization to accomplish the desired result. True, hospitalization in all cases of extreme hyperthyroidism is essential, but in the case of moderate severity it is being found more and more satisfactory to undertake the preoperative preparation with Lugol's solution while the patient is ambulatory. This is a distinct advantage economically and is justifiable so long as it does not militate against the successful outcome. Obviously, the group of persons who are in crisis or approaching crisis, must be hospitalized just as before.

The group of patients who constituted extreme risks formerly represented in The Mayo Clinic about 25 per cent of the patients who arrived in crisis; some were moribund and all were extremely ill. In this group there were about twenty-five or thirty deaths each year; this has been reduced to approximately two or three deaths in each thousand since the administration of iodine. It is customary, except in the extreme cases in which huge doses may be given satisfactorily, to administer 10 drops of Lugol's solution three times a day over a period of a week or ten days.

The effect of Lugol's solution on the gland, grossly and microscopically, is very characteristic. Prior to its introduction, the active, friable exophthalmic goiter was a vascular gland and was difficult to handle, depending on its size, the length of time the process had been present, and the amount of undermining which the general resistance of the patient had undergone. The systematic and continued administration of Lugol's solution, prior to resection of the gland, reduces this state to one closely resembling that of colloid goiter.

The constant and characteristic changes have been studied in microscopic sections of glands removed before and after the administration of iodine. It has been possible to study the same gland in both states in cases in which ligation has been deemed essential. The upper pole was exposed and a small portion of the gland was removed for microscopic study when the ligation was done. Subsequently, after Lugol's solution was given and the gland resected,

sections of the same gland could be studied microscopically. The changes in the colloid and connective tissue elements were both constant. Likewise, there was an increase both in colloid material and in the connective tissue of the gland. The size and regularity of the acini were increased at the same time. The vascularity of the gland was markedly decreased, rendering it not only less friable but much more easily handled. There was decrease in the height of the epithelium and decrease in the cytoplasmic bodies of the epithelial cells, as well as decrease in mitotic figures and lymphocytic infiltration. The gross gland appeared reddish, lobulated, and meaty.

A second important result of the preoperative preparation, namely, reduction of necessary operative procedure in a single case, is highly satisfactory from the standpoint of economics as well as of mortality. In the days before Lugol's solution was used, it was customary in the extremely toxic cases of exophthalmic goiter to test out the patients with a single ligation of the superior thyroid vessel on the right side or of the right superior pole. If this was not followed by an unusually severe reaction, the desired resection was done at a subsequent date, usually seven days later. If, however, the single ligation was accompanied by marked reaction, as evidenced by increased pulse rate, elevation of temperature, an increase in nervousness and occasionally by hyperthyroid crisis, ligation of the left superior pole was accomplished at the end of seven days and the patient, after a short period of hospitalization, was sent home for a period of three months for rest in an effort to regain lost ground. This period of waiting usually resulted in a gain of about 19 pounds in weight and marked general improvement so that resection could be undertaken, but this resection usually was more difficult technically because of the increased vascularity of the gland. Since the administration of Lugol's solution has been standardized and given as a routine in The Mayo Clinic, primary thyroidectomy is done in practically all cases. Exceptions are cases in which (1) the patients constitute excessively high risks due to long-standing hyperthyroidism, or to general constitutional ailments; (2) some local cause, such as tracheal obstruction or deformity, and (3) some technical complication that has developed at operation and has necessitated its abandonment, such as hemorrhage, injury to nerves, or sudden change in the patient's condition which has lowered the threshold of surgical safety. In my own service, during 1928, I did not perform a single ligation and only one lobectomy.

Absolute control of postoperative hyperthyroidism is one of the most valuable accomplishments of Plummer's plan of iodization. In 1927, not one of the eleven deaths from exophthalmic goiter in the whole series of cases in which operation was done at The Mayo Clinic was attributable to an acute postoperative hyperthyroid crisis, which formerly was a common and dreaded accompaniment of operation. True, high temperature, thready, rapid pulse, with some nausea and constitutional reaction, were seen after operation, but usually they were of short duration, were not accompanied by any of the phenomena pathognomonic of postoperative hyperthyroidism, and at the end of twelve to forty-eight hours they had disappeared and the normal type of postoperative convalescence had been established.

SURGICAL TECHNIQUE

With the abandonment of graded procedures, except in the most grave cases, and for the most urgent and definite indications, the standardized technique used as a routine in the surgical treatment of exophthalmic goiter is subtotal thyroidectomy, removing a portion of both lobes and the entire isthmus. The features of this operation, in order of their relative importance, are five: (1) avoidance of injury to the recurrent laryngeal nerve; (2) accurate and complete hemostasis; (3) removal of sufficient thyroid tissue to relieve the hyperthyroid state; (4) preservation of the parathyroid function, and (5) a satisfactory cosmetic result.

One of the most important considerations, I think not only to the patient but also to the surgeon who operates on the thyroid gland, is the selection of a proper type of anesthesia. This unquestionably varies in the hands of different surgeons, with equally satisfactory results, but in the main I believe the ideal anesthetic in operations for goiter is a balanced type, consisting of both a local anesthetic and of gas by inhalation. The choice of the type of inhalation anesthetic rests between nitrous oxide and ethylene. Both are highly satisfactory in the hands of expert anesthetists and I believe it should be emphasized that only expert anesthetists should administer to a sick patient with toxic goiter any kind of a general anesthetic. Anesthesia for cases of goiter demands more accurate administration and careful judgment of the condition of the patient at all times during the operation than anesthesia for other types of even graver ailments not associated with dysfunction of endocrine glands. My

own preference for anesthesia is ethylene by inhalation and 0.5 per cent procaine subcutaneously. I prefer to have the patient anesthetized lightly with ethylene during the injection of the tissues of the neck with procaine. This prevents undesirable discomfort during the injection, and is of very short duration, since one may inject in the neck, raise the flap, and mobilize the first lobe of the gland in five to seven minutes. By the time the superior thyroid vessels have been clamped and cut and the gland resected, the patient is awake and usually does not need further anesthesia for this side. I do not believe that block anesthesia of the nerves of the neck is as satisfactory as local infiltration, and I am strongly inclined to consider the introduction of the latter type of anesthetic almost as formidable a procedure as the average subtotal thyroidectomy. Certainly, it is disagreeable to the patient and prolongs the state of nervousness and anxiety with which any operation in a highly toxic patient is approached. The ideal incision for thyroidectomy is one across the neck between the anterior jugular veins, when the patient lies with the neck extended, and two fingers' breadth above the sternal notch. With the head in a normal position following operation, this incision has a slight curve and the subsequent scar may be satisfactorily covered with a string of beads or a ribbon. I believe it is more satisfactory not to remove the platysma myoides muscle with the skin flap. By this step one avoids certain venous trunks which frequently give an unnecessary amount of bleeding in the preliminary steps of the operation.

When the skin flap has been raised above the thyroid cartilage and the lower flap dissected down to the manubrium sterni, the ribbon-like muscles of the neck are injected with 0.5 per cent procaine and are separated longitudinally. I do not believe that it is necessary to cut the bellies of these muscles across, because I think one may obtain adequate exposure in all cases, except those in which the gland is hugely enlarged, by retraction of these prethyroid muscles. However, I find no fault with any surgeon who can obtain better exposure by their division and it must be admitted that it is hard to tell which patients have had the muscles cut and which have not, after a week has elapsed, save by reference to the record. This brings the operation down to the thyrohyoid muscle. I prefer to leave this on the gland and to remove it. Its fibers are cut across and the muscle is pushed away, so that the gland itself comes into

view. The gland is now grasped with Lahey forceps, elevated, and retracted mesially. As one cuts away the fibers of the thyrohyoid muscles (they are practically valueless later, so their sacrifice is proper), the lateral veins come into view and they should be ligated singly and accurately. To break these veins away (they are very friable), would bring about the likelihood of a subsequent hematoma in the neck, with undesirable pressure. With ligation of these middle thyroid veins, the posterior lateral surface of the gland is mobilized and one may introduce the index finger of the left hand behind the right lobe, not only to elevate it but to act in some manner as a control for oozing hemorrhage during the subsequent steps of the resection. Two forceps are now placed across the superior pole, catching the superior thyroid vessel. The superior pole is cut across and next is severed, after the suspensory ligament has been caught between clamps. Next, the isthmus is approached, and at the upper angle the tracheal rings are exposed. The isthmus is now divided between clamps all the way down to the lower pole. With the gland elevated on the finger and with the resection made from within outward, always above the level of the trachea, as much of the right lobe of the thyroid gland as is deemed necessary is now recovered and the larger vessels are caught with clamps before they are cut. It is my custom to tie off these vessels with hand ligatures after catching them with clamps and subsequently to suture over the cut surfaces of the gland to insure accurate hemostasis. I ligate the superior thyroid vessels by transfixion ligation. I think it unsafe to place a free-hand suture on this pole, for a few fibers of the omohyoid muscles may be caught and should the patient awaken or, uncomfortable, toss the head around, the retraction of this muscle occasionally might pull back the ligature and bleeding might result. The same suture which ties the superior pole is run down the cut surface of the gland, approximating its two edges and insuring hemostasis. I emphasize hemostasis because, despite my most untiring efforts, occasionally a hematoma develops in the neck, either from uncaught veins which subsequently may ooze, or from a very small branch of the inferior thyroid artery which I have overlooked. This happens only in about one case in 200 but it is an undesirable even though an unavoidable complication.

Having finished the resection, ligation and suture of the right lobe of the thyroid gland, I think it is always desirable that the

patient, if not already awake, be awakened from the anesthesia and his voice heard. Injury to the nerve, or lack of injury to it, is thus established, and one may proceed with removal of the isthmus and resection of the left lobe in a similar manner. The nerve is rarely caught with a clamp in operation of this type but most frequently is injured when a sudden hemorrhage from a loose vessel occurs in the area in which the nerve is most superficial, and one strikes down into a bloody field with forceps in an effort to stop the bleeding. Or occasionally, it happens that the inferior thyroid vessels are particularly friable and arteriosclerotic, and break off close to the gland. Here again, efforts to control the bleeding without catching the vessel under the eye sometimes result in injury to the nerves. By all means, one should avoid any such attempts at hemostasis, and with a finger or gauze sponge should rapidly stop the oozing and hold it, removing the finger or sponge slowly so that the open mouth of the vessel may be seen and caught. If the inferior thyroid artery is broken off, it can be held easily with one finger and dissection back into the neck can be made, with the result that the artery is tied as a main trunk close to its origin on the thyroid axis. This ligation of the inferior thyroid artery, to avoid any further oozing, as a deliberate step in the operation, either before resection of the lobe or after lobectomy has been completed, is a not undesirable maneuver. I frequently have ligated both inferior thyroid vessels in subtotal thyroidectomy and never have seen parathyroid insufficiency result from it.

We owe a great deal to Terry and Millzner of the University of California for their information about the site of the parathyroid gland. The older anatomists described these small glands as four in number and situated one at each pole of the thyroid gland. That this is probably true in the vast majority of instances is incontestable, but certainly there is variation in 15 to 20 per cent of cases and the glands may lie all on one side, all at one pole, or may be distributed according to various anomalous ways. Terry and Millzner have found (in our own laboratories at the clinic we have confirmed their observations) numerous parathyroid bodies not only along the superior parathyroid vessels but on the inner surfaces of the gland, and occasionally buried in the gland. I have removed two parathyroid bodies in the same patient in two instances; the

nature of these bodies was proved by microscopic section, but evidence of parathyroid insufficiency did not develop.

It is my custom to leave an amount of tissue approximately as large as a third of a normal-sized lobe on each side after resection of the thyroid gland for exophthalmic goiter. The amount of tissue left varies with the individual surgeon, but probably the equivalent of a half to a third of a normal-sized lobe is about the average amount of gland left. In highly toxic cases I believe one should remove more glandular tissue than in the cases of exophthalmic goiter of moderate severity.

The question of closure of the wound without drainage is one which individual surgeons must decide. Certainly a great many thyroidectomy wounds may be closed without introduction of a drain and heal primarily without formation of serum. My own choice is to drain both lateral fossae with a small Penrose drain brought out through a stab wound in the right ribbon-like muscles, lateral to the median line of the neck. This obviates a scar that would be adherent to the trachea, which would move up and down on swallowing, and which would be the source of no little annoyance to any person unfortunate enough to possess it.

In few diseases of any considerable severity is recovery following operation so spectacular as in exophthalmic goiter. The usual length of time in hospital following resection of the gland without complications is five days, during which time Lugol's solution is administered. Dismissal from the hospital is followed by a period of ambulatory treatment which averages about fifteen days. For a period of about three months after dismissal, it is the custom to insist that these patients who have undergone thyroidectomy for exophthalmic goiter continue to take 10 drops of Lugol's solution once a day. They should return to their duties slowly, but at the end of three to six months they should be back to a practically normal economic status. A check on their basal metabolic rate and a review of their convalescence and clinical symptoms, at three and six months after operations, is quite satisfactory in determining the exact amount of benefit derived in each case.

MORTALITY

Death following thyroidectomy for exophthalmic goiter may be directly attributable to three causes: (1) the direct result of the

disease or the less direct effects of the disease; (2) result of a technical accident during the operation, and (3) a combination of the disease and the operation. The reduction of the high mortality which followed the operation a decade or two decades ago makes thyroidectomy compare most favorably with any operation for a disease of equal severity. At The Mayo Clinic, since 1922, the mortality from exophthalmic goiter has never been more than 1 per cent. During 1922 there were eleven deaths in 1,093 operations performed for exophthalmic goiter, making a mortality of just 1 per cent. During subsequent years this death rate has been slowly but very definitely reduced until 1927, when the mortality in 1,520 cases of exophthalmic goiter was 0.72 per cent. Although it is unlikely that this mortality will be reduced to a much greater extent over a period of years, because of the occasional unavoidable accident in any surgical procedure, such as embolus, cardiac failure or technical accident, one feels relatively comfortable in the knowledge that the mortality for an acute toxic condition has been brought to and below the level for surgical procedure for chronic ailments, such as duodenal ulcer, gallstones and appendicitis.



VOLVULUS OF THE CÆCUM

By F. J. KIRBY, M.D.*

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A volvulus may be described as a twist of the intestine upon its mesenteric axis. Quain's Embryology states: The large intestine is not at first marked off from the small intestine by any difference in calibre. Its commencement is distinguishable about the sixth week in the human embryo by the appearance of the cæcum, which gradually develops as a lateral protrusion of uniform calibre. While the remainder of the cæcum and colon increase in size, its blind end remains narrow to form the vermiform appendix. It is not until the sixth month that the cæcum descends into the right iliac fossa, and drags the ascending colon into its position in the right flank.

Treves remarks, Volvulus of the ascending colon and cæcum may be considered under three categories:

1. A twist of the ascending colon around its own axis.
2. Twists brought about by an abnormal loop formed by the ascending colon and cæcum with a long and distinct mesocolon.
3. Twists of the cæcum upon itself or about its own axis.

Occlusion of the bowel may be brought about by a twist of the ascending colon around its own vertical axis. This condition may be found in a colon that presents no anatomical abnormalities. The other two varieties depend upon certain congenital abnormalities.

In the fœtus the small bowel occupies at one time the right side of the abdomen, while the large gut is represented by a straight tube which passes on the left side vertically from the region of the umbilicus to the pelvis. The cæcum is at first situated in the neighborhood of the umbilicus, and then ascends in the abdomen towards the left hypochondrium. It next passes transversely to the right hypochondrium, and then descends into the corresponding iliac fossa. It may, however, be permanently arrested at any part of its course. Thus the cæcum may be found under the umbilicus or in the sac of a congenital umbilical hernia, or in the left hypochondriac region.

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1. The whole of the large intestine has at one time an extensive mesocolon, and in some cases this may persist throughout life.

2. The ascending colon and cæcum when provided with a long mesocolon are apt to get into difficulties. The coil may become twisted about its own mesenterial axis, just as is the case with the sigmoid flexure.

3. In this variety of volvulus the cæcum has been described either as bent upon itself, or as twisted upon itself. The difference between these two very similar terms is really greater than the terms themselves would permit.

In the former instance, the cæcum is bent about a line at right angles to its long axis. The result is that the lower part of the caput coli is found in front of the ascending colon, and its posterior surface becomes anterior, while the appendix and the lowest point of the cæcum become uppermost.

In the other variety the cæcum is twisted around its own long or vertical axis, so that its relations to the ascending colon are practically undisturbed.

Moynihan states: "The sigmoid flexure is the most common site of volvulus, but the ileum, jejunum, or cæcum may be separately or conjointly involved. In the majority of cases some anatomical abnormality is the determining factor—such as the cæcum and ascending colon suspended by a mesentery continuous with the mesentery of the small intestine." Among the predisposing causes are mentioned adhesions, old scar formations, hernia, mesenteric cysts, and chronic intestinal stasis with tracture on the mesentery (Bosquette, Dolare).

The direction of the twist has been described by one author as clockwise, by another as counter-clockwise.

The most frequent location of volvulus is in the left hypochondrium. It has also been found in other locations, as right hypochondriac, epigastric, umbilical or pelvic region, and in a hernial sac on the right side. Men are more subject to volvulus than women, about 70 per cent occurring in men. Volvulus is a disease of younger life, almost half the cases occur between the 20th and the 40th year of age.

The symptoms of volvulus are those of intestinal strangulation, viz.: pain, vomiting, distention of the abdomen, and inability to empty the bowels, or to pass flatus. Beeger found that of 67 cases collected

by him, 27 never had had any previous intestinal trouble. Faltin found, in 27 cases out of 79, the volvulus appeared suddenly in the night during sleep.

Heavy lifting, trauma, excessive eating, pregnancy and strenuous exercise have been described as the precipitating factors.

The treatment of volvulus varies from resection of the affected bowel and intestinal anastomosis to simply untwisting the bowel.

Fixation of the loop to the abdominal wall in the iliac region, or an attempt to limit its mobility by suturing the left aspect of the mesentery to the parietal peritoneum has been practiced. Fixation of the loop to the abdominal wall does not suffice to prevent future distention. Lateral anastomosis at the base of the loop is dangerous, as recurrence of the torsion has occurred shortly after this procedure.

Beegeer recommends in light attacks, detorsion, resection of the gangrenous portions, entero-anastomosis and for difficult cases, detorsion and enterostomy.

The conclusion is that in those cases where the intestine is in good condition, detorsion with fixation of the cæcum will suffice. In cases of gangrene, complete resection is indicated, unless a very large portion of the small intestine is involved. If immediate resection cannot be carried out, the twisted loop should be brought forward and resected when the patient's condition has improved.

The mortality after operations for volvulus is high. Corner and Sargent (St. Thomas Hospital Reports, 1903) state that out of 40 cases of cæcal volvulus collected by them, on which operations were performed, 21, or 52.5 per cent, died. Others cite a death rate as high as 65 per cent. Without operation, the mortality is 80 to 85 per cent.

In my case the cæcum was twisted around its long or vertical axis.

REPORT OF CASE

M. S., male, age 41, was admitted to St. Joseph's Hospital, Baltimore, July 1, 1924, for abdominal pain, vomiting and inability to have a bowel movement. He has had a gastric ulcer since 1917 which was accompanied by several hemorrhages, but has experienced no other serious illness. He has had multiple fibromata molluscae of the body, head and extremities since childhood (Von Recklinghausen's disease). There was no history of constipation. The present illness began in the afternoon of June 28, 1924, when he was attacked by cramp-like pains in his abdomen. Thinking exercise would afford relief he played golf vigorously for several hours. The pain

persisted, however, until 1:30 A. M. next day when he sent for his physician, who ordered enemata, which proved ineffectual, and the pain continued throughout the day, and following day. About 1 P. M., July 1, 1924, the patient began to vomit and to have hiccough. With the onset of hiccough and vomiting, the pains in the abdomen became somewhat less and the patient began to have heartburn, and abdominal distention. The patient was sent to St. Joseph's Hospital, with a diagnosis of intestinal obstruction.

The pulse rate was 72; temperature, by mouth, 97F.; rectal temperature, 99.2 F.; respirations, 30. Examination revealed a well developed, well nourished white man, who complained of pain in the abdomen, vomiting and inability to evacuate his bowels. The entire body was studded with large and small pigmented fibromata. The heart and lungs were clear, with no râles, no murmurs nor irregularity. The pulse was regular and full, and the vessels soft. The abdomen was somewhat distended. The liver dullness was obscured by tympany. The spleen and kidneys were not felt. There was no tenderness anywhere except in the right side at the level of the umbilicus and no dullness could be elicited in the flanks. On tapping over the right lower quadrant a splashing and a sense of fluctuation were made out. Peristaltic sounds were not heard.

The white blood cells numbered 23,800 of which the polymorphonuclear neutrophils constituted 88 per cent, and eosinophiles, 0.5 per cent. The urine was negative.

IMPRESSION: INTESTINAL OBSTRUCTION.

The patient was taken to the operating room soon after admission and etherized. As he vomited some brownish looking fluid, while he was going under the anæsthetic, his stomach was washed out before starting the operation.

The abdomen was entered through an incision at the outer border of the right rectus muscle. On entering the peritoneal cavity the entire small intestines were found to be distended above a marked constriction at the ileo-cæcal junction.

A large fluctuant tumor filled the abdominal cavity. This extended from the right hypogastrium upward and across the abdomen and pressed against the diaphragm on the left side. This tumor was the size of a watermelon and similarly shaped. It was delivered, and found to be an enormously dilated cæcum filled with liquid feces. The mass measured 45 cm. in length and 30 cm. in diameter at its largest part. Mounted on this was the appendix. The tumor was dark red, almost purple in color and in places small greenish islands of gangrene were seen. A marked constriction was found at the ileo-cæcal junction and also at that of the ascending colon with the cæcum due to a twisting of the cæcum at these two points. The direction of the twist was from right to left, or clockwise and almost a complete turn.

The tumor was untwisted. The cæcum was cut from the ileum beyond the line of constriction, and in the same manner from the ascending colon. As much of the mesentery and its vessels were preserved as possible.

The cut ends of the intestines were inverted, and a lateral anastomosis was then made between the ileum and ascending colon. Some gauze wrapped in rubber tissue was placed in the pelvis for the purpose of drainage, and the wound closed down to the drains.

The patient was returned to bed in fair condition. 500 cc. of normal salt solution were given subcutaneously; and glucose and bicarbonate of soda was administered by rectal drip.

The patient made an uneventful recovery. The wound had entirely healed on July 21, when the patient left the hospital for home and he said he felt very well.

On February 9, 1928, the patient reported he was in excellent health.

NOTE—I beg to refer to the article on volvulus of the cæcum by Dr. Henry Flack Graham, in the *Journal of Surgery, Gynecology and Obstetrics*, for March, 1926, from which I have drawn somewhat in the preparation of this paper, and the complete and extensive bibliography Dr. Graham has supplied.



SPINAL ANÆSTHESIA*

By THOS. B. AYCOCK, M.D.†

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There still exists considerable prejudice and skepticism on the part of many surgeons and general practitioners as to the safety and reliability of spinal anæsthesia. This is due in part, no doubt, to the ill effects that are sometimes seen from spinal drainage. Nearly every physician has heard of some untoward symptom following the use of spinal puncture. For this reason many practitioners feel it their conscientious duty to safeguard their patients from any procedure that involves the introduction of a foreign body or substance into the spinal canal unless there is a disease of the spinal cord or its membranes.

If spinal anæsthesia had been introduced in 1845, in its present form, as was ether, I have no doubt it would have been just as popular today as the latter. On the other hand, as you know, it was not considered until forty years ago, and then it got away to a bad start. Corning, in 1885, a neurologist, first did a spinal puncture on a dog, in an attempt to relieve pain by the introduction of cocaine into the spinal canal. Quincke, in 1891, withdrew spinal fluid from the spinal canal. Bier, in 1899, produced surgical anæsthesia on his assistant and six other patients and in turn, his assistant did it on Bier. They likewise used cocaine.

Following the publication of the results of these eight cases, there was widespread use of the method with the report of many untoward symptoms and disastrous results. Naturally, the method soon fell into disrepute, and these experiences still live in the minds of many surgeons today.

Spinal anæsthesia was not revived again until the introduction of stovain, tropacocain, betauecain, etc. With these drugs the results were not entirely satisfactory, for the anæsthesia was uncertain, and inconstant in its duration. There were changes in the arterial

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pressure, unfavorable heart action, disturbances in respiratory function, nausea, vomiting, extreme pallor, cold sweats, anxiety, systemic disturbances, fear of impending death, and bad after effects, consisting of backache, headache, and both temporary and permanent paralysis.

To overcome these disadvantages the work of Babcock, Labat, Einhorn, Braun, and Barker has probably done most, and more recently the work of Pitkin has done a great deal to popularize the use of spinal anesthesia by the introduction of a substance into the spinal canal lighter or heavier than spinal fluid preceded by routine prophylactic use of ephedrine. He further demonstrated the importance of understanding the physiological action of the drug used and emphasized the need of it being administered by an experienced anesthetist. No one thinks of expecting a successful anæsthetic with inhalation anæsthesia without some experienced person being present to direct its administration, but for some reason many surgeons become prejudiced against the use of spinal block, because they know of unsuccessful attempts to employ it by an inexperienced person. Likewise, in a number of clinics, conclusions have been drawn from a series of cases where it was given to extremely bad risks resulting in high mortality and at the same time it was administered by inexperienced anesthetists.

My experience with this form of anesthesia began in 1925, at the Baltimore City Hospitals, with the use of apothesine as the anesthetizing agent. In this clinic 325 injections were given with two deaths and two alarming reactions. Nearly all of these patients were ones in which a general anæsthetic almost surely would have proven fatal. Strange to say nothing happened in the first 175 cases except for a slight fall in blood pressure which was, however, only temporary. Up until this time no attempt had been made to go above the second lumbar vertebra. This, I think, accounts for the lack of reaction since anesthesia rarely ever reached higher than the umbilicus.

The first severe reactions occurred in patients 70 and 65 years of age, respectively. Nausea, vomiting, respiratory difficulty, fear of impending death, and a marked fall in blood pressure were the outstanding symptoms. Both responded to treatment, which consisted of the administration of intravenous saline with 10 minims of adrenalin to 100cc. of the salt solution, and in addition hypodermic injections of ether and caffeine.

Two deaths occurred several hours after the operation from myocardial failure. During the operations both of these patients showed signs of bulbar anæmia, but because of the extra load thrown upon the heart resulting from stagnation in the peripheral vessels there was not sufficient myocardial reserve to carry them through. Temporarily, however, they responded to treatment and the operation was finished in one but not in the other. Exclusive of the above cases, the series was remarkably free of untoward symptoms. It may be added that, in these four cases, the anæsthesia reached above the costal margin.

The drug that was used (apothesine), was found to increase the cell count in the spinal fluid as long as two days following its injection into the spinal canal. Pitkin made a similar observation plus the fact that there was, in some cases, a perivascular round cell infiltration in the nerve tissue. His observations as to the effects of novocain showed that the latter drug failed to produce any macroscopic or microscopic changes. For this reason, I have abandoned the use of apothesine and have substituted novocain in some form exclusively.

A technique has been worked out at the surgical clinic of the University of Maryland which practically assures the certainty and the height of the anæsthesia together with the prevention of wide variations in the blood pressure.

It is well known that novocain in solution is rapidly absorbed by nerve tissue and when introduced into the spinal canal blocks the passage of motor or sensory stimuli. Naturally, in the production of surgical anæsthesia as high as the costal margin the motor stimuli by way of the white rami communications are paralyzed, causing vasodilation. This fall in blood pressure depends therefore, on the height of the anæsthesia. Babcock and Labat advocate the lowering of the head to give the brain its proper blood supply thereby preventing bulbar anæmia. This alone, I feel, allows a stagnation in the peripheral vessels that may prove fatal in myocardial cases. To overcome this we administer a dose of ephedrine one-half hour before and another at the time the anæsthetic is begun. The use of this drug in spinal anæsthetic was first introduced by Ockerblad and Dillon in 1927.

This technique does not necessitate the introduction of any extraneous substance into the spinal canal except dissolved novocain

crystals in spinal fluid which previously had been drawn from the spinal canal. Nothing is put in the solution to prevent diffusion. The success of its action depends upon an understanding of hydrodynamics as pointed out by Stout which briefly is as follows:

"The upward extension of anæsthesia is directly proportional to the speed of diffusion of the novocain injected in the spinal canal, the rate of fixation of novocain by nerve tissue, the volume of fluid injected, the speed with which it is injected, the cerebrospinal pressure, the specific gravity of the solution, and upon the position of the patient's body where there exists a difference in the specific gravity between the solution injected and the spinal fluid."

The above review of the physical chemistry, as pointed out by Stout, makes clear the basic principles of a method to control the extent of novocain diffusion in the spinal canal, thereby, regulating the height of the anæsthesia as is easily demonstrated on the body a few moments after the novocain solution is injected.

To control blood pressure a prophylactic dose of ephedrine is given prior to the introduction of the anæsthetic into the spinal canal. It is given in varied doses in direct proportion to the degree of vasodilation expected. The first dose is given one-half hour prior to operation, because if spinal anæsthesia is induced and the motor stimuli, by way of the white rami communicantes, cut off before the ephedrine has taken effect, its results are disappointing. On the contrary, it is given early to fortify the vaso-motors against the action of the anæsthetic in order to establish a normal blood-pressure.

There is considerable discussion as to the toxicity of ephedrine and some have reported deaths following its use. According to the experimentations of Pitkin on rats and transferring his findings to human beings, the maximum safe dose for a man weighing 160 lbs. is 13 gms. Solis-Cohen and Gillhens state that the maximum safe dose is 5000 mgms. In a series of 200 cases at the University Hospital it has never been necessary to give more than 200 mgms. and in practically all of these cases the blood-pressure has remained normal or above normal throughout the operation even though the height of anæsthesia was often above the costal margin.

The height of the blood-pressure before operation determines the size of the dose of ephedrine. Given a case of hypotention with a blood-pressure of 90/60 50 mg. of ephedrine will increase the pressure to approximately 120/90. A hypertensive with a blood-pressure

of 200/110 should not receive over one-half this amount and if anæsthesia is only required in the perineum it is not necessary to give any at all.

At the time of introduction of the novocain solution in the spinal canal, care should be taken as to the volume of fluid injected and the rate at which it is injected. In addition there should be no loss of fluid. A needle with a short bevel and small caliber (22 gauge) should be used so as to avoid post puncture leakage and trauma to the cord. By doing this, headaches following the operation may be prevented.

Never attempt to introduce a spinal puncture needle above the conus medullaris. It has been definitely shown that the introduction of novocain, stovain, tropacocain, or any of these drugs in the cord will cause instant death. Therefore, it is best always to stay below the first lumbar vertebra.

PREOPERATIVE PREPARATION OF THE PATIENT

- 1—Rest in bed for twenty-four hours prior to operation.
- 2—Force fluids on the patient as in any operation.
- 3—Soap-sud enema the evening prior to operation.
- 4—Morphia, grs. $\frac{1}{4}$, and Scopolamine, grs. $\frac{1}{300}$, one hour prior to the operation.
- 5—Ephedrine, 50 mgms., one-half hour prior to the operation.
- 6—Cover eyes of patient and instruct assistants not to talk during the operation. Keep the room absolutely quiet.

TECHNIQUE

- 1—Record blood-pressure prior to the anæsthetic.
- 2—Lay patient on one side or the other and prepare field with alcohol, ether, and iodine, from midsacral region, to middorsal region.
- 3—Bow back, knees up, flex neck, and have patient held in this position by an assistant so as to separate the lamina of the vertebral column. Then select the site of puncture.
- 4—Raise a wheal in the skin with $\frac{1}{2}$ per cent novocain solution at the proposed site of puncture between the spinous processes.
- 5—Introduce a needle (22 gauge short bevel) in the midline through the intraspinous ligament and finally into the dural sac. Remove the stylet and, if the spinal fluid is clear, re-insert the stylet temporarily.

- 6—Open the ampule of novocain crystals, and allow the spinal fluid to drain into the ampule drop by drop. When a sufficient amount has been obtained, re-insert the stylet. Dissolve the novocain crystals in the spinal fluid thus obtained. Then draw up the solution into a syringe whose nozzle will fit the needle used for puncture.
- 7—Inject the solution into the spinal canal at the rate of 1 cc. in five seconds.
- 8—Remove the needle from the spinal canal while it is still attached to the syringe.
- 9—Blood-pressure readings are taken and recorded every five minutes for the next twenty minutes and as often thereafter as necessary.
- 10—Turn patient on his back and lower his head within five minutes after the injection.
- 11—Keep the patient's head lowered for two hours after the operation.

A competent anæsthetist should watch the patient during the operation and attend to his mental and physical comfort. Ephedrine and adrenalin should be kept ready to give in case an emergency should arise. Likewise, a fountain syringe with normal saline solution should be held ready for use. If nausea and vomiting occur and there is a fall in the blood-pressure, give ephedrine and adrenalin and at the same time lower the head. The fall in blood-pressure is much more likely to occur in cases where the anæsthesia reaches the costal margin.

Spinal anæsthesia offers to the surgeon a highly technical method directly under his control. On him rests the responsibility for its success or failure. The injection determines the location, duration and the degree of the anæsthesia. If it is unsuccessful the blame does not rest upon the assistant but upon the surgeon himself. If it is successful, however, there is complete freedom from pain, the tissues are relaxed, the intestines are contracted, the sphincters relaxed, and peristalsis is augmented. No other anæsthetic can compare favorably with it in the production of muscular relaxation. A striking illustration of this is its effect on muscular spasm in fractures and dislocations. Overriding of bone-fragments is overcome with a minimum amount of traction.

Perhaps, the most interesting thing in favor of spinal anæsthesia

is that it lessens shock. The blockage of shocking impulses coming from the field of operation is made manifest by the condition of patients following operation. They are remarkably free of its symptoms as well as free from pain. Morphia in post-operative cases is rarely necessary and post-operative pneumonia is a rarity.

Probably, the most outstanding indication for the use of spinal anæsthesia is in intestinal obstruction. The relaxation that is mentioned above has its ideal applicability in cases of abdominal distention. In cardiac disease there is no contraindication to its use. The fall in blood-pressure rests the heart and the burden thrown on it is lessened throughout the anæsthesia. One cannot be too careful, however, in administering ephedrine so as not to give too much or too little.

In pulmonary and kidney disease, I find this form of anæsthesia to be ideal. There is not enough toxic substance introduced into the body to injure the kidneys, and in pulmonary disease there is no irritation to the tracheo-bronchial tree.

In the aged it is far better borne than inhalation anæsthesia, but I do believe one should not give it to moribund cases without a careful study of the patient. There is no question in my mind but that one can many times substitute regional anæsthesia with a greater degree of safety than with spinal anæsthesia.

In conclusion let me emphasize that the surgeon should not confine himself to the use of spinal anæsthesia any more than he should limit himself exclusively to the use of inhalation anæsthesia. On the contrary, he should familiarize himself with all its forms. I believe the time is not far distant when the public will demand that a particular anæsthetic be used, and the surgeon who fails to acquaint himself with all of its forms will be seriously handicapped in the years to come.

TONSILLECTOMY: MODIFIED AND ORIGINAL TECHNIQUE

By H. V. DUTROW, M.D., F.A.C.S.*

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The removal of the faucial tonsils has become one of the most commonplace operations in the realm of surgery, and the methods of procedure are as numerous as the physicians who attempt the operation. This is a lamentable fact for all concerned, especially for the patient. The end-results accurately reflect the degree of skill, experience and surgical judgment of the operator. Though each may have some points of technique peculiar to himself, that may often be used advantageously by another, the fact remains, as in all surgical operations, that only by study and observation of the *modus operandi* of skilled and experienced laryngologists can the wheat be sifted from the chaff. Only then are laryngologists able to correlate their own ideas and skill with the best methods to be used in their daily work. They must ever bear in mind that they are dealing with anatomic structures the functions of which are most delicate and complicated, and that the utmost care is required during an operation to preserve, as far as possible, their normal relationships.

Examination: It is not sufficient to make a casual examination by depressing the tongue with an ordinary tongue depressor. The tonsils must be compressed and the anterior pillars displaced laterally to reveal the true condition of the glands. Even then it is not always possible to tell whether they are normal within their own structure. I have seen many apparently blind abscesses deep in the structure of the tonsil, after removal, in both children and adults, of which there was no visible evidence upon examination prior to the operation. It has been my practice for years in determining this important point to be governed in many instances by the history of the case, physical examination, and the clinical observations of the family physician or the internist referring the patient for operation, rather than to rely entirely upon the appearance of the fauces and the glands *in situ*.

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Anesthetic: I am confident that a great many deaths reported each year by physicians performing operations on the nose and throat are due to the excessive doses of one, or of more than one, anesthetic used in the same case. Dr. Emil Mayer,¹ chairman of the Committee for the Study of Toxic Effects of Local Anesthetics of the American Medical Association, revealed in his report of fatalities from local anesthetics, the almost uniform high concentration and the multiplicity of anesthetics used. More than one local anesthetic should never be used in a given case unless it is absolutely necessary. If the throat must be swabbed with a cocaine solution to abolish the superficial reflexes, one should use a solution not stronger than 4 per cent and lightly should paint only the surface of the pharynx, care being taken that the solution is not swallowed. It has been my experience that the complete abolition of the superficial pharyngeal reflexes is rarely necessary. If they are not entirely abolished, blood and infected material will not enter the larynx and trachea, with attending complications. Abscess of the lung occurs less frequently after a local than after a general anesthetic, notwithstanding the various avenues of infection enumerated by many observers. In children under 12 or 14 years of age a general anesthetic must be used for obvious reasons.

A local anesthetic is preferable for all adults except those with hypersensitive throats or a high degree of nervous instability, and in a large percentage of these cases the anesthesia can be fully controlled by proper preliminary narcosis. The desired narcosis can usually be obtained by the hypodermic administration of $\frac{1}{4}$ grain (16 mg.) of morphine with $\frac{1}{150}$ grain (0.4 mg.) of scopolamine, the dosage varying according to body weight, from one half to one hour before operation. This procedure eliminates the local reflexes to a great extent and in most cases allays all fear and apprehension, so that the operation can be performed satisfactorily. With the patient in the upright posture, the operator has the advantage of having the anatomic parts in their natural relative position and of obtaining the co-operation of the patient, which is most desirable. The solution injected is composed of a 1 per cent solution of procaine hydrochloride and a solution of epinephrine hydrochloride in a concentration of 1:10,000 in ampules containing 6cc. One ampule for a patient is usually all that is needed, 3cc. for each tonsil.

Injection of the Anesthetic: Years of experience and observation

have proved to me that the submucous peritonsillar infiltration is the most efficient and certainly the safest method. The needle should not transfix the tonsil because of the danger of carrying micro-organisms constantly resident there into the deeper structures of the pharyngeal wall, thereby producing a cervical cellulitis which often proves fatal. Another objection to the deep injection of a foreign substance, especially in large amounts, is the trauma which produces a prolonged and painful reaction and convalescence. Nerve blocking is open to the same objections, and in addition, I feel, is unnecessary for satisfactory anesthesia. The extra-capsular injection, i. e., injection of the solution into the space between the so-called capsule of the tonsil and the aponeurosis of the constrictor muscles, is not advantageous and in most instances is impossible to accomplish. The anesthesia is almost always complete, and the operation is performed with little or no pain.

Operation: The purpose should always be primarily to give the patient the benefit of a complete operation regardless of the size, shape and position of the gland. Since no two persons have tonsils exactly alike, it is impossible to use a standardized ring instrument in all cases. Sluder claims that with his own instrument he can remove more than 98 per cent of all tonsils. If he can do this, I am sure that he is the only operator using his instrument who can even approximate his claim. The Sluder technique suggested the underlying principles governing the use and construction of practically all ring instruments. The method of using a ring instrument seems and looks simple, but it is most technical in its practical application. The age of the patient is a factor in determining the kind of operation to be done. Tonsillectomy in adults with either a general or a local anesthetic at once suggests the method of dissection and snare. I feel that a ring instrument of any design has a limited field of usefulness in this class of work, for the reasons already mentioned. A few years ago, Shurly² of Detroit, in a comprehensive paper based on a wide experience, said that the methods of choice in all cases of tonsil enucleation were the Sluder instruments, when practical, and dissection and snare. I am becoming more and more convinced that there is really only one method which is strictly surgical and practical in all cases, that is, the use of dissection and snare. Dissection is simple in simple cases, and it can be readily adapted to any size, shape, position and condition of the gland. This method is essential

in fibrosed, adherent and fan-shaped tonsils in which the margins extend peripherally and face or blend into the mucous membrane covering the pillars. In short, there is no known anatomic condition that cannot be satisfactorily met by careful use of the dissection and snare method.

The dissection should be accomplished with as little trauma as possible. Bands of adhesion should be cut, not torn with great force by blunt dissection. The mucous membrane should be separated from its attachment to the surface of the tonsil with a sharp concave knife, care being taken to preserve as far as possible the mucous membrane to provide a normal covering for the anterior and posterior pillars. The dissection can then be carried laterally to the floor of the tonsillar fossa by the careful use of a pair of Lillie's tonsil scissors introduced closed, either side of the blades being used for blunt dissection. The blades introduced closed may be opened, the dull edges being used by reverse scissors motion for blunt dissection; a considerable degree of separation of the tonsil from its fossa is thus accomplished, and the fibers of the aponeurosis of the constrictor muscles are thereby brought into view. At this juncture, the anterior and posterior pillars should be separated from the gland from above downward. An effort should then be made to deliver from the fossa the upper pole of the tonsil, leaving on the upper and outer surface a fan-shaped attachment which contains the blood supply entering from above; this attachment should be clamped with a properly curved forceps before it is cut proximal to the forceps. The descending palatine artery enters the tonsil at this point; if it is clamped before it is cut, a sheet of blood will be prevented from flowing down and obscuring the field of operation. The dissection is continued downward to a level corresponding to the base of the tongue; the snare may then be thrown over the free upper two-thirds of the tonsil and passed well down to engage the lower pole, thus effecting its complete enucleation. If the clamp is still on the descending palatine artery, it should be ligated with catgut and the clamp removed. If the clamp engages too much tissue, it must be released; if bleeding ensues, the artery should be grasped by a suitable forceps and ligated. Dr. A. G. Farmer, my associate, and I have placed a ligating forceps on the market which bears our name, and which fills this need, I believe, quite satisfactorily.

The control of hemorrhage is important in all operations on the

tonsils. It is absolutely essential in the strictly surgical procedure of dissection and snare. When a blood vessel is cut with a sharp instrument, it is necessary to tie it with a ligature to prevent bleeding. Laryngologists have been slow to conform to the basic principles of the general surgeon, that is, the achievement of complete hemostasis as he proceeds with the operation. I believe that this tendency has been due principally to the extreme difficulty in attempting to tie a bleeding vessel in such an inaccessible place as a tonsillar fossa. But this should not prevent the operator from giving the patient the benefit of a complete operation, and a little persistent effort and practice will enable him to tie these vessels easily and successfully. It is incumbent on the operator to perfect his technique to meet this situation. I worked with this problem, and it was a real one, for several years while I was learning to ligate the vessels rather than abandon what I considered a fundamentally sound surgical operation.

Complete Removal: From a clinical standpoint, it is the duty of the laryngologist to remove if possible all of the tonsillar tissue. If a portion of the gland is permitted to remain in situ, a potential focus of infection is perpetuated, and the clinical condition for which the operation was performed continues. Textbooks refer to the inclusion membrane of the tonsil as a capsule. Poynter³ in 1921, stated:

"We are accustomed to speak of a tonsillar capsule, but it is rather difficult to demonstrate this as a definite morphologic entity. In the earlier development the lymphoid masses form in the areolar tissue between the mucous membrane of the pharynx and the surrounding muscles. Later there is more or less condensation of this tissue outside of the masses and between them, so that we have a sheet of connective tissue outside of the tonsil and running through the tonsil at various points. It does not seem that there is ever a very great condensation at the upper pole, so that one may say that the upper half or two-thirds of the tonsil rests in a bed of loose areolar tissue which separates it to a considerable extent from the muscle. When the tonsil is dissected out, this tissue falls into a plane and has the appearance of a definite sheath, but from examination of carefully prepared microscopic sections of the organ I cannot discover thickened or condensed plane of tissue."

His conclusions are emphasized by my clinical and surgical experience, in which the extrusion of bits of tonsillar tissue followed

what I thought had been a complete operation. The alternating anatomic relationship of circular bands of muscle fibers of the middle and inferior constrictor muscles of the pharynx and of lymphoid or tonsillar tissue of the lower pole of the tonsil has been clearly demonstrated by anatomists. This condition requires the utmost care in a tonsillectomy to insure the removal of as much of the lymphoid tissue as possible. This is the only point in the tonsillar fossa in which one is often justified in removing some bands of muscle fiber because of the lymphoid inclusions between them.

Nonsurgical Substitutions: Electric coagulation, electric needles, electrodesiccation, the radio knife, etc., *ad infinitum*, have a limited field of practical use. They should be used only pending a favorable time for complete operation. Some laryngologists previously enjoying a favorable reputation have succumbed to the appeal of unscientific claims of the manufacturers of electrical apparatus and have proclaimed to the public through front page newspaper articles the wonderful virtues of the new operations. That as time goes on some of these electrical substitutions will find a limited place in the field of otolaryngology is not to be doubted, but it will be a slow process and will have to be supported by sound clinical evidence. To my mind, at the present time there is no substitute for a complete tonsillectomy performed in a strictly surgical way.

CONCLUSIONS

1. Refinements in operative technique may be obtained by study and observation of the work of skilled and experienced laryngologists.
2. Give full consideration to the clinical back-ground suggestive of a focus of infection rather than to the objective appearance of the tonsils.
3. Operators should avoid as far as possible the injection and local application of excessive doses of several anesthetic solutions. Abolition of the superficial pharyngeal reflexes is rarely necessary. In adults, a local is preferable to a general anesthetic.
4. The submucous peritonsillar infiltration is sufficient for good anesthesia and is without the danger of initiating a cervical cellulitis following deep injection, especially if the needle transfixes the infected tonsils.

5. Ring instruments are suitable in only a selected number of cases. The use of dissection and snare is practical in all cases, especially for adults.

6. The descending palatine artery may be dissected, clamped and severed proximal to the forceps, thus preventing the flow of blood from above during the completion of the operation. All blood vessels should be ligated with catgut by the aid of a suitable forceps.

7. The general clinical condition is not benefited if a portion of the tonsil is permitted to remain in situ. In the absence of a complete capsule and owing to the tongue and groove relationship of muscle fibers and tonsillar tissue at the lower pole, the performance of a complete operation is often difficult.

8. One should be cautious in accepting the relative merits of many of the electro substitutions, because their field of usefulness is limited at the present time. One must not forget that when a piece of tonsil remains, whether it has been partially cooked by an electric apparatus or left after a tonsillectomy, it is just as much a potential source of systemic infection as though no part of the tonsil has been removed.

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1040 Fidelity Medical Building.

BULLETIN

OF THE

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DR. JOSEPH WILLIAM HOLLAND

December 22, 1869

September 1, 1929

Dr. Holland died at ten minutes past two o'clock in the afternoon on board the S. S. *Doric*, about two hours from Montreal. It was a beautiful Sunday afternoon and we had had three quiet days on the St. Lawrence river. His death came very suddenly at the end of a vacation abroad, where he had showed a continuous interest and pleasure in the manifold circumstances of European travel. The trip had been free from annoyances and both crossings had been pleasant ones. He seemed happy and contented and just before he died he said that he had been feeling especially well and had never had a more enjoyable time.

His death is a serious loss to the University of Maryland and especially to the University Hospital. Teaching hospitals are earnestly seeking those who possess the following qualities—men and women who are well trained in their respective specialties, who have the ability and the will to teach and who, because of their character, exert a strong influence on all the human elements that make up a hospital. Because he had these qualities in such full measure, makes Dr. Holland's passing such a grievous loss. He was an able surgeon, painstaking, conscientious and skillful and was a teacher of rare



DR. JOSEPH WILLIAM HOLLAND

fidelity, patience and success. He had had a long training in the anatomical laboratory, so that he taught surgery largely from the standpoint of anatomy and was a fine representative of a type of surgeon that is now passing; but it is not in either of the above fields that his loss is so irreparable. It is "Joe" Holland, the man, whose place cannot be filled in the University Hospital group. It was the courage and faithfulness, the justness and quiet strength that were in him that make every one of us yearn to meet him again along the halls and corridors of the hospital.

He was widely popular. Students and patients knew him as Dr. Holland, internes, residents and nurses spoke of him lovingly as "Uncle Joe" and his friends and associates called him "Joe." He was impartial, just and honest in his contacts with everyone, so that his colleagues came to lean on him in matters of judgment and advice. He had the rare quality of talking frankly and plainly, uninfluenced by any personal feeling. He is dead and the world will never again be quite the same, because we shall miss his friendship, his gentleness and his companionship. We remember and repeat the words spoken by David over Abner—

"Know ye not that there is a prince and a great man fallen this day in Israel."

Dr. Holland came of English ancestry on both sides of his family. He was the son of Dr. John Thomas and Priscilla Atwell Holland. His grandfather was William Holland and his grandmother Rachel Harwood. His father was a native of Queen Anne County, Maryland and it was here that Dr. Holland was born. He was related to many of the old families of Virginia, Delaware and the Eastern Shore of Maryland. There are many Hollands in England at the present time and we saw the name Holland a number of times on the Menin Gate, which is the memorial at Ypres to the unknown British dead, who fell in Flanders field.

Dr. Holland entered the Medical School very much better prepared than the average medical student of his time. He had attended Washington College at Chestertown, Maryland one year and entered the Wilmington Academy at Dover, where he graduated in 1889. He then taught school three years. Two of these years he lived at his father's home and was strongly influenced by this association.

Dr. John Thomas Holland, Dr. Holland's father, graduated in

medicine from the University of Maryland in the class of 1862. The title of his thesis for graduation was "*Vis Medicatrix Naturae*," and in style and content gave evidence of good foundation and unusual acumen. In these latter days, when requirements for the study of medicine have become so advanced, there are many senior students who could not give so good an account of themselves as Dr. Holland did in his essay. He practised medicine in Princess Anne and his conception of the science and art of medicine was many years ahead of his time. He was so distressed by the ignorant methods of his day and the tendency to the support of quackery on the part of the public, that he wrote a book on "*Rational Medicine Versus Quackery*." This book was never published, but Dr. Joseph Holland had it typewritten and bound and it is a part of his library.

He was one of the first physicians in the country to advocate the open air treatment of tuberculosis by forced feeding and was very much criticized in his community, because he insisted that his patients keep their windows open and spend as much time as possible in the sun and out of doors. His chief impatience, however, was because of the ignorance of so many physicians and the widespread prevalence of quackery. Altogether the older Holland was a very unusual man. Practicing medicine as he did quietly in a country community, his thoughts and actions ran far ahead of his generation. It is interesting to note that in the catalogue of 1862, only seventy-three operations were performed in the Baltimore Infirmary, which was the forerunner of the University Hospital and only three of these could be called major operations, two amputations of the thigh and one excision of the breast.

Dr. Joseph William Holland graduated from the Medical Department of the University of Maryland in 1896. He was Clinical Assistant in 1895-96, and in 1896-97, was Second Assistant Resident Physician and in 1897-98, was Resident Physician in the University Hospital. In 1898-99, he was at first Assistant Superintendent and afterwards Medical Superintendent. In 1899-1900, he was Medical Superintendent in the City Hospitals at Bay View. He gave a good account of himself during the year he was in the City Hospitals. He reorganized the service, started a pathological museum and altogether showed those qualities that were later to characterize all his work. In 1901, he began private practice and was Lecturer in Clinical Surgery and visiting surgeon at Bay View. In 1902-03, he was made

Demonstrator of Anatomy and Lecturer in Clinical Surgery and taught Osteology. He was also attending surgeon to Bay View and Demonstrator of Anatomy in the Dental Department and continued in these positions until 1908. The simple reading of this list of appointments shows his industry and interest in the art of teaching. In 1908-09, he was made Associate Professor and Demonstrator of Anatomy and Lecturer of Clinical Surgery and Osteology and Associate Professor and Demonstrator of Anatomy in the Dental Department and continued in these positions until 1915, when he was made attending surgeon to the University Hospital and took over one of the services in surgery. In 1920, he severed his connection with the Anatomical Department and became Clinical Professor of Surgery. From this time on he carried a heavy burden of surgical teaching. Not only was he in charge of a part of the hospital service, but taught in the dispensary two days a week a greater part of this time and was Head of the Department of Topographic and Surgical Anatomy, in which fields he did teaching of the highest excellence and value. His long training as Demonstrator and Associate Professor of Anatomy had given him a rare knowledge of the structure of the human body and his work for the last nine years in this department has been of an outstanding nature.

During the war he was a member of the commission whose duty it was to examine physicians who were volunteering for service with the Medical Corps of the Army. He volunteered for service in the Medical Corps of the Army in April, 1917, and was commissioned in May. He was not ordered out for active duty, however, because the University authorities asked that he be put on the list of teachers whose services could not be spared. In addition to these other duties he served on numerous committees, taught surgery to the nurses and occupied, in many respects, the most responsible and influential position in the Surgical Department of the University Hospital.

He was married June 20, 1906, to Miss Pearl Huntington Robins, the daughter of Mr. and Mrs. Harrison Robins, who survives him together with a sister, Mrs. Clarence Tucker and two brothers, Mr. John Thomas Holland of Centerville, Queen Anne County, and Mr. George A. Holland of Frederick County.

When Ex-president Elliott of Harvard was asked to name a text for the Library of Congress he selected a passage from the Prophet

Micah, "What doth the Lord require of thee?" As to how Dr. Holland answered this question instinctively and unconsciously in his daily life can best be stated by recalling one of the incidents of Christ's ministry—"And behold, a certain lawyer stood up and tempted him saying 'Master, what shall I do to inherit eternal life?'" Then followed one of the finest lessons in ethics in all literature,—the parable of the good Samaritan, at the end of which Christ asked in turn "Which now of these three, thinkest thou, was neighbor unto him that fell among the thieves?", and the lawyer answered "He that showed mercy on him."

In action and in speech Dr. Holland was a fine example of that profession which Stevenson said "stands above the common herd and is the flower of our civilization." It was of such men that the Bard of Avon was thinking when he said, "Still in thy right hand carry gentle peace to silence envious tongues."

"Life is too short to waste
In critic peep or cynic bark
Quarrel or reprimand,
'Twill soon be dark."

ARTHUR M. SHIPLEY.

MARYLAND ALUMNI WILL BANQUET AT SOUTHERN MEDICAL ASSOCIATION MEETING

Many graduates of the University of Maryland Medical School are expected to attend the meeting of the Southern Medical Association at Miami—America's tropic wonderland city. The dates are November 19-22 inclusive. Clinics and discussions in section meetings are being emphasized.

On Thursday evening the Maryland men will hold their Annual Banquet. Dr. Lee W. Elgin of Miami, has accepted the Chairmanship of this affair. Last year over fifty attended the Alumni Banquet at Asheville.

On to Miami and the Alumni Reunion.

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THE PRESIDENT'S MESSAGE

The Alumni Associations hold an important place in the organization of the University of Maryland. The President and Board of Regents decide and direct the policy of the University, the Faculties of the schools teach their specialties, the students acquire knowledge, and the alumni in the working world carry the ideals of their school into the daily life of the community and in turn through their Association bring ideas from practical life back to the Students, the Faculties, and the Administrative Officers.

At this time the Medical Alumni Association through its organization and equipment is ready to perform its duties. The loyal and efficient officers of previous years have developed activities which we must continue and expand. The Alumni House provides



DR. ALEXIUS MCGLANNAN

a home for our Association, and a place of welcome for our members. The BULLETIN is on a secure foundation. The Student's Book Store is growing in usefulness. Association with the Student's Council keeps us in contact with undergraduate problems. The Student's Loan Fund, small and inadequate as it is, permits the Alumni Association to help a few desirable men to complete their course. Representation on the Hospital Council, the Alumni Council, the Editorial Board of the BULLETIN gives us a direct voice in these places.

Our older members come from the Alumni Associations of three separate schools. Those who have not visited Baltimore in recent years cannot appreciate the completeness of the fusion of the Baltimore Medical College, the College of Physicians and Surgeons, and the University of Maryland Medical School, which has taken place in the present school. We are united in purpose and in endeavor. We need the help of every alumnus to carry out our projects.

ALEXIUS MCGLANNAN.

DOCTOR HOLLAND

The feeling is general, amongst those who have watched its progress in recent years, that this association is beginning to take a vital place in our rapidly advancing University. To no one individual, is more credit due than to Doctor Holland. His interest and unflagging enthusiasm was simply another expression of his splendid loyalty to everything pertaining to his Alma Mater, the Medical School.

His was an extraordinary nature, calm, judicial, fair and surpassingly honest in every contact and in every way. He had the faculty of studying each idea, each problem without rancor and without prejudice. He had reached the age when the minds of many men, lose the ability to consider new things with grace and equanimity, but to him, newness was no reproach.

The evaluation of a man's life may be made in diverse fashions, fame, wealth, power depending upon the importance given them by the beholders. There is one quality, universally accepted as important, the power to demand the love and respect of one's associates and this, Doctor Holland possessed far beyond most men. It seems impossible to believe that "Uncle Joe" will no longer act as our

guide and friend, will no longer add the richness of his personality to the life of the School he loved.

LOYALTY

What a storehouse of knowledge there is in our University. What pleasant experiences we all have had while going through the daily grind endeavoring to become responsible men in the profession. There we acquired courage and learned to encourage the faltering and disheartened. We also acquired noble impulses to help suffering humanity. Many times during that period, we all doubtless, felt that our efforts were not appreciated. Nevertheless, we acquired a knowledge of which we are justly proud. If our efforts had not been appreciated we probably would not have been members of the alumni body today. In graduating us our school gave us all that it had in return for our labors. I do not believe that there is a single one of us who is at heart lacking in sympathy for the cause. However, so many of us go out of its existence and never in any little way give back to it the credit that it is justly due. I make no reference to financial support, for that is less needed than the loyalty that each one of us can give without any monetary expenditure. What we need most is loyalty to our Alma Mater on the street, in our libraries, offices, public meetings, and daily contacts. Do we determine if the criticisms that we make of its activities and programmes are constructive or destructive? Have we done our part in trying to make it so that criticism could not or need not have been made? Do we take into consideration that the major part of the work that is done, is in most instances, without pecuniary compensation and often at great sacrifice?

During the last fifteen years there have been phenomenal changes and advances in the fields of medicine and surgery. There has been a new order of things in both fields and out of this rearrangement many branches have come to the front. All of this has been done to broaden the scales of the neglected fields. Our institution has endeavored to keep pace with these changes. Therefore the alumnus of today has had better and broader instruction than the one of ten or fifteen years ago. The fields must be further developed and newer ones created. To do this we need the support of every alumnus. The more loyal supporters we have in our association to help us with

our problems the more can be accomplished in developing our Alma Mater. Let us realize that as educated men ourselves we must have the habitual attitudes that are called ethical. Such attitudes as honor, honesty, helpfulness, good will and cooperation. Furthermore, we should, above all, be loyal to the most important institution of our profession.

CHANGES IN THE FACULTY

The following changes have been made in the Faculty of the University of Maryland School of Medicine for the year 1929-1930.

HARRY FRIEDENWALD, A. B., M. D., Emeritus Professor of Ophthalmology.

CLYDE A. CLAPP, M. D., Professor of Ophthalmology.

EDWARD A. LOOPER, M. D., Professor of Diseases of the Throat and Nose.

MELVIN S. ROSENTHAL, M. D., Professor of Dermatology.

ROBERT W. JOHNSON, JR., M. D., Professor of Orthopaedic Surgery.

J. W. DOWNEY, M. D., Professor of Otolaryngology.

C. LORING JOSLIN, M. D., Professor of Clinical Pediatrics.

C. REID EDWARDS, M. D., Clinical Professor of Surgery.

W. F. ZINN, M. D., Clinical Professor of Diseases of the Throat and Nose.

H. K. FLECK, M. D., Associate Professor of Ophthalmology.

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EDWARD S. JOHNSON, M. D., Associate Professor of Surgery.

CLEMENT R. MONROE, M. D., Instructor in Orthopaedic Surgery.

CLIFFORD LEE WILMOTH, M. D., Instructor in Orthopaedic Surgery.

SAMUEL GLICH, M. D., Associate in Pediatrics.

WALTER C. MERKEL, M. D., Associate in Pathology.

MONTÉ EDWARDS, M. D., Associate in Diseases of the Rectum and Colon.

RAYMOND LENIHARD, A. B., M. D., Associate in Orthopaedic Surgery.

LEWIS B. HILL, M. D., Associate in Psychiatry.

JOSEPH SINDLER, M. D., Associate in Gastro-Enterology.

WILLIAM J. TODD, M. D., Associate in Pediatrics.

JOHN G. MURRAY, JR., M. D., Associate in Obstetrics.

C. F. HORINE, M. D., Associate in Surgery.

CLEWELL HOWELL, M. D., Associate in Pediatrics.

WETHERBEE FORT, M. D., Instructor in Medicine.

J. S. EASTLAND, M. D., Instructor in Medicine.

L. J. MILLAN, M. D., Instructor of Genito-Urinary Diseases.

K. B. LEGGE, M. D., Instructor in Genito-Urinary Diseases.

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F. A. HOLDEN, M. D., Assistant in Ophthalmology.
HENRY F. GRAFF, A. B., M. D., Assistant in Ophthalmology.
A. LLOYD McLEAN, M. D., C. M., Assistant in Ophthalmology.

CATALOGUES WANTED

Dean Rowland has requested the insertion of the following notice. He earnestly solicits Alumni who have in their possession the catalogues listed below to turn them in to him so that he can complete his files:

COLLEGE OF PHYSICIANS AND SURGEONS

1903-1904

1902-1903

1891-1892

1890-1891

UNIVERSITY OF MARYLAND

1887-1888

1886-1887

1883-1884

1882-1883

1881-1882

We assure you that Dr. Rowland will be most appreciative of your help in supplying any of the missing issues listed above and takes this opportunity to thank you in advance for any aid you might render him.

PARTIAL LIST OF SUBSCRIBERS TO BOND ISSUE

The following is a partial list of subscribers to the Alumni Bond Issue as outlined in the April BULLETIN. In each BULLETIN the names of additional subscribers will be published.

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DR. A. C. LEWIS, Fall River, Mass.

DR. A. F. RIES, Baltimore, Maryland

DR. JAMES MADISON HORTON, New York City.

The subscriptions are coming in very satisfactorily, and we hope to be able to bring the drive to a close in the near future. Your subscription, as a helper in this movement, which we consider a good one, will be appreciated. Any amount from five dollars up will be acceptable.



MEDICAL ALUMNI HOUSE,
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DEATHS

DR. R. LEE CHANEY, Shellman, Ga.; P. & S., class of 1888; aged 64; died, May 21, 1929, of cerebral hemorrhage.

DR. EBERLE GEDDINGS WELCH, Baltimore, Md.; Washington University, class of 1873; aged 79; died, June 26, 1929, of diabetes mellitus and senility. He was a son of the late Dr. Albert George Welch, class of 1834, of Anne Arundel County, Md.

DR. EDWIN CLARENCE DISBROW, Toms River, N. J.; P. & S., class of 1881; aged 76; died, June 26, 1929, of cerebral hemorrhage.

DR. JOHN HOMER HOFFMAN, Baltimore, Md.; class of 1881; aged 72; died, August 2, 1929, of cancer of the bladder.

DR. JAMES H. ELLINGTON, Sandy Ridge, N. C.; P. & S., class of 1872; aged 79; died, May 29, 1929, of heart disease.

DR. HENRY QUINCY ALEXANDER, Pineville, N. C.; class of 1888; aged 65; died, June 11, 1929, of angina pectoris.

DR. PERRY BOSWORTH, Huttonsville, W. V.; B. M. C., class of 1892; aged 64; died, June 25, 1929, of chronic nephritis.

DR. ELMER E. BUSH, Daniels, Pa.; P. & S. class of 1890; aged 64; died, March 24, 1929, of pneumonia.

DR. LUCAS GILES, Van Buren, Ark.; P. & S., class of 1887; aged 68; died, May 26, 1929.

DR. JAMES ALBERT RIPPERT, Duluth, Minn.; P. & S., class of 1910; aged 43; died, July 12, 1929, of cerebral hemorrhage.

DR. RICHARD BAXTER NORMENT, Baltimore, Md., class of 1880; aged 71; died, August 23, 1929. He was the father of Dr. Richard Baxter Norment, Jr., Hagerstown, Md., class of 1914 and Dr. John E. Norment, Old Hickory, Tenn., class of 1924.

DR. FISH ELGIN, St. Louis, Mo.; a student in the class of 1873 and M. D., of St. Louis Med. Col., class of 1877; aged 79; died, August 5, 1929.

DR. HARRY E. KNIPP, Baltimore, Md.; class of 1887; aged 61; died, August 14, 1929, following an operation. Dr. George Adam Knipp, Baltimore, Md., class of 1923, is a son.

DR. GEORGE ROOT MILLER, Hartford, Conn., P. & S., class of 1886; aged 73; died, July 16, 1929, of melanotic sarcoma.

DR. ROBERT W. SMITH, Hertford, N. C.; class of 1892; aged 61; died, September 7, 1929, of a lingering illness.

DR. BENJAMIN MOSBY SMITH, Los Angeles, Cal.; class of 1888; aged 72; died, May 4, 1929.

DR. MERTON E. SEAFUS, Elmira, N. Y.; B. M. C., class of 1898; aged 59; died, May 9, 1929, of pneumonia.

DEATHS

DR. FRANK D. KINSLEY, Compton, Cal.; P. & S., class of 1882; aged 72; died, May 15, 1929.

DR. JOSEPH W. HOLLAND, Baltimore, Md.; class of 1896; aged 59; died, September 1, 1929, on board ship bound from Europe to America, of cerebral hemorrhage.

DR. EDWIN MILTON NICHOLS, Barton, Vt.; M. B. C., class of 1895; aged 57; died, May 3, 1929, of pneumonia.

DR. CHARLES PHILIP SELLERS, Zanesville, Ohio; P. & S., class of 1893; aged 57; served during World War; died, August 22, 1929, of peritonitis following an operation for gall-stones.

DR. JESSE GARY PALMER, Opelika, Ala.; P. & S., class of 1884; aged 67; died, in August, 1929, following an operation.

DR. J. S. ROBINSON, Kingston, N. Y.; P. & S., class of 1884; aged 73; died, February 10, 1929, of carcinoma.

DR. NEWTON M. HENDRICKS, Dayton, Ohio; class of 1885; aged 67; died, August 19, 1929, of carcinoma.

DR. J. ALFRED RIFFE, Covington, Va.; P. & S., class of 1909; aged 45; died, August 5, 1929, of heart disease.

DR. GEORGE ARMISTEAD NOLAND, Ashburn, Va.; class of 1909; aged 41; died, June 10, 1929.

DR. CHARLES O. JACKSON, Bath, N. Y.; P. & S., class of 1887; aged 66; died, suddenly August 12, 1929, of heart disease.

DR. EDWARD LIONEL MARSHALL, Big Island, Va.; P. & S., class of 1891; aged 68; died, May 20, 1929, of heart disease.

ON TO MIAMI
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BULLETIN

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No. 3

DIABETIC COMA

By HARRY M. STEIN, M.D.*

BALTIMORE, MD.

Coma still remains as a common cause of death in diabetes mellitus, although the general treatment of diabetes has unquestionably in the past five or six years improved in every other way. It is in the majority of instances a preventable complication, and unless the patient be in extremis coma is usually curable with insulin. This drug is one of exceptional properties and may well be said to be specific in coma of diabetic origin. Insulin was discovered in 1921 and despite the fact that more than seven years have elapsed the mortality from diabetic coma in most localities is still high.

The Metropolitan Life Insurance Company has recently found that in the year 1929 up to April 15th there were 433 deaths reported to them as being due to diabetic coma and this number represented 41% of the total fatal cases of diabetes.

In Maryland from 1924 to 1928 inclusive there were 1,628 deaths reported due to diabetes mellitus and although the exact percentage due to coma is not known, it is in all probability considerably higher than it should be. There are a number of reasons for this state of

*University of Maryland, Class of 1914.

affairs. Diabetes mellitus is too often treated lightly by both the physician and the patient and the latter is frequently not educated properly nor fully in matters pertaining to his disease. Coma is not recognized at times in its early stages and even when coma actually is present patients are frequently not given the chance of hospital care where proper facilities are at hand for combating this serious condition. It is only with experienced and skillful treatment that diabetic coma can be cured and the condition should always be considered as a medical emergency just as much as are a ruptured viscus, hemorrhage, etc., considered surgical emergencies. Diabetic coma was known as far back as 1854 and at that time was described in the literature in full detail. In 1874 Kussmaul published his classical description of it and the breathing as described by him is known as Kussmaul breathing, being practically pathognomonic of coma occurring in diabetics. It is also to be remembered that previous to the discovery of insulin it was invariably a fatal event.

CAUSES AND SYMPTOMS OF DIABETIC COMA

The onset of coma may be sudden but it usually comes on insidiously, the premonitory or early symptoms lasting for several hours and sometimes for several days. The young diabetic is more likely to suffer from this complication than the old, although it does not respect any age and may occur during any stage of the disease.

Joslin states that the first four years of diabetes and the second decade of life are the periods in which one finds coma to be most frequent. It is not necessarily a complication of severe diabetes but may occur in mild cases as well.

The most common causes of diabetic coma are:—

- 1.—The failure of a patient to follow diet instructions commonly known as "breaking diet."
- 2.—Precipitation of coma by infections of different sorts (carbuncles, cellulitis, pneumonia, etc.).
- 3.—Omission of insulin.

Patients should be warned about breaking their diets and over-eating. They should be told not to omit insulin without the knowledge of the physician and in addition should be warned about the reporting of any infection, no matter how insignificant it may appear. Any untoward symptoms such as diarrhoea, unusual headache, nausea, vomiting, etc., should immediately cause them to seek medical ad-

vice. In most clinics for the training of diabetic patients they are advised that if fever, infection or any of the symptoms noted previously should occur the following routine must be observed:—

- 1.—Call the physician.
- 2.—Go to bed.
- 3.—An enema should be taken, if necessary.
- 4.—Cover up well and keep warm.
- 5.—Take 5 ounces of warm liquid every hour.

The symptoms of diabetic coma are at times indefinite, but the cases with gradual onset far out-number those with abrupt or sudden beginning.

It is rare not to have it preceded for several hours by indisposition of some type. The recognition in its early stage is highly desirable and the occurrence of pain in the abdomen, nausea, vomiting, dyspnoea, etc., in a diabetic should always put the physician on his guard causing a prompt and careful investigation into the patient's condition.

For the sake of simplicity the following groups might be discussed:—

Group I.—Cases in which the patients are not unconscious and although very ill, will respond to questioning, cerebrate well and are able to offer cooperation. They might be classified as pre-coma states or as cases of severe acidosis without coma. In them moderate dehydration is a feature which is rarely absent. The skin, mouth and tongue are fairly dry. There may be slight increase in temperature, pulse rate is rapid and breathing is disturbed principally in the form of hyperpnea. The blood pressure is normal or slightly lowered. Headache, nausea, vomiting and extreme thirst are present and a history of constipation is not unusual.

From a laboratory standpoint the urine is found to contain sugar, acetone, diacetic acid and the blood sugar is elevated, 300 mgms. per 100 cc. of blood being the average. I would like to repeat here that the patient although seriously ill is mentally clear and able to cooperate.

Group 2.—In this group the patient is unconscious or semi-conscious, does not respond to questioning or if so, incoherence is evident and above all he cannot help himself or act in a cooperative manner. Marked dehydration is practically always present; the patient's breathing is of the definite Kussmaul type; restlessness is found in the semi-comatose cases and deep stupor in the advanced cases.

Abdominal tenderness may be found and the presence of a soft eyeball is of great importance. The blood pressure is low, pulse rate rapid and weak and there may be a loss of control of the visceral reflexes. There are frequently evidences of loss of weight, the tissues are flabby and there may be definite sclerosis of the palpable arteries.

The urine is found to contain a large amount of sugar with diacetic acid and acetone present. A trace of albumin with casts is more often present than absent. The blood sugar is high, anywhere from 350 mgms. per 100 cc. of blood up to 1000 mgms. Carbon dioxide combining power of the plasma is 20 volume % or less. Acetonemia is pronounced and the blood lipoids may be high. Leucocytosis up to 25,000 may be seen and in some way is probably related to dehydration. It is to be kept in mind however, that before either of the above states occur, the patient as a general rule has had a period of hours or several days in which acidosis has been present, gradually but surely becoming more pronounced. There may be loss of appetite, recurrent headache, obstinate constipation or diarrhoea. If infection of some sort is present fever is the rule.

Insulin reactions of greater or lesser severity may occur and most of us have seen at one time or another a patient totally unconscious as the result of this. Here the picture is entirely different from that of diabetic coma, an overdose of insulin causing sweating and absence of sugar in the urine. At times coma may occur in a patient with diabetes and have no relation to the diabetes. I refer here to cerebral apoplexy, uremia, etc. This possibility is always to be thought of and ruled out. The accompanying table is set forth with the idea of graphically bringing out the main points of difference noted in several of the more common states accompanied by coma.

TREATMENT OF DIABETIC COMA

The opinion should be unanimous that all severely ill diabetics should be sent to a hospital. If the diagnosis of coma be certain the patient should be given from 30 to 50 units of insulin before being placed in the ambulance. When in the hospital the patient is, of course, placed in bed; kept warm by using blankets and heat; an enema with warm salt solution is immediately given; the blood and urine are obtained for examination and within a half hour the results are known.

If the patient is vomiting, gastric lavage is done with warm water and repeated in three or four hours if indicated. Needless to say this should be done gently and with the use of a small calibre tube.

If the patient is not totally unconscious he is given water and small quantities of orange juice every hour, but regardless, all patients are given hypodermoclysis with normal salt solution for the first 24 or 36 hours and longer if necessary. This is a sure way to combat dehydration and the amount used will range anywhere from 2000 to 4000 cc. of fluid according to indications. In the first 24 or 36 hours glucose solution is used intravenously in either a 25 per cent or 50 per cent solution every three or four hours in amounts not exceeding 150 cc. It is the writer's practice to use the 50 per cent solution frequently and in small quantities, believing that danger of overloading the circulation is always an imminent one. The dosage of insulin is, of course, a variable one and usually differs in each case. It is given as a rule every one to two hours, the initial dose being from 30 to 50 units and, of course, used immediately after the patient is admitted to the hospital. From then on the dose varies and one is guided by the results of examination of the blood sugar and urine every one or two hours.

As a general rule 20 to 30 units are given each two hours until the patient is better. The criteria for improvement are clinical as well as chemical. One cannot state the exact amount of insulin to be given to any patient in coma, and the dose is always that which is needed to control the situation. The reckless use of insulin is to be advised against, but there is considerably more danger in not using enough insulin than in giving too much. Actually there does not seem to be any reason for timidity in the presence of hospital advantages.

The circulation in cases of diabetic coma always needs support and digitalis and caffeine sodio-benzoate should always be given intramuscularly. These drugs are used as long as indications exist. In the presence of a carbuncle, cellulitis, etc., surgical consultation and treatment are obtained. If some intercurrent infection, such as pneumonia or typhoid fever exists, this disease is, of course, treated accordingly. All patients with infections have blood cultures made. Just as soon as the patient is able, he is put on a diet low in protein and fat but relatively high in carbohydrate. If the patient has been taking insulin previous to the onset of coma, needless to say it is con-

DIFFERENTIAL

	ONSET	PHYSICAL FINDINGS	BREATHING
DIABETIC COMA	Usually slow, matter of hours or several days. Very rarely sudden.	Dehydration. Arteriosclerosis. Pulse rapid. Reflexes normal or absent; subnormal temperature; pink mucous membranes.	Kussmaul in type.
COMA DUE TO INSULIN REACTION.	Sudden—due to overdose of insulin, excessive exercise or failure of diet-insulin balance.	Skin cold and moist. Resistance to handling. Pulse normal or sometimes rapid. Convulsions in late cases.	Quiet, shallow respirations or may be normal.
FRACTURE OF SKULL.	Sudden and usually with history of injury.	External evidences of head injury; profound coma; slow pulse; may be signs of weakness or paralysis.	Variable but is frequently deep and noisy.
URÆMIC OR NEPHRITIC COMA.	Always slow—a matter of hours or even weeks.	Skin dry. Full bounding pulse. Signs of cardiac hypertrophy; arteriosclerosis; restlessness; convulsions or twitching of muscle groups.	Stertorous and often of the Cheyne-Stokes variety.
BRAIN TUMOR.	Usually slow, over a period of days or weeks. Very rarely onset is sudden.	Slow, full pulse, weakness or paralysis of muscle groups.	Normal.
CEREBRAL HEMORRHAGE.	Sudden.	Evidence of arteriosclerosis and often cardiac hypertrophy; sweating, paralysis of one or the other side of the body; unless fatal, tendency for patient to come out of coma in a few hours.	Stertorous type. Cyanosis frequent.

DIAGNOSIS OF COMA

EYES	URINE	BLOOD	BLOOD PRESSURE	MISC. FINDINGS.
Soft eyeballs. Fundi usually normal. Retinal arteriosclerosis.	Sugar +++++. High Sp. Gr. Acetone + Diac. Ac. +. Alb. trace. Casts +.	Sugar 350 mgms. or higher. Plasma CO ₂ —20 Vol. % or less. N. P. N. normal but toward end, rising. Acetone + Chlorides low.	Low or normal.	
No eye symptoms. Normal fundi.	Sugar absent. Second specimen to be examined if first should contain sugar.	Sugar 40 mgms. per 100 cc. or less.	Normal or low.	
Pupils dilated. No fundal changes unless there is marked intra-cranial pressure with choked disc.	No changes.	Normal.	Normal at first but may change later, depending on intra-cranial pressure.	Skull X-ray often clears up diagnosis. Sometimes bloody spinal fluid.
Pupils usually dilated; fundi often show retinal hemorrhage, arteriosclerosis, albuminuric retinitis and edema of nerve head.	Sugar absent or not more than faint trace. Albumin present with casts and often R. B. C. Low Sp. Gr. Diacetic acid and acetone usually absent.	Sugar normal but sometimes is slightly elevated up to 170 mgms. CO ₂ sometimes lowered but not extreme as in diabetes. N. P. N. high, 100 mgms. or more.	Usually elevated and frequently very high 200 plus.	
Choked disc, full veins and edema.	Normal.	Normal.	Normal. Very rarely paroxysmal hypertension is seen.	History of headaches with nausea and vomiting.
Pupils dilated often deviation to one side or other. Retinal arteriosclerosis; may be fundal hemorrhages.	Normal or trace of albumin with casts. If nephritis is also present, same findings as in uraemic coma.	Normal.	Usually high but sometimes immediately after hemorrhage, it is lowered to subsequently rise.	Spinal fluid sometimes bloody.

tinued, and if infection or fever of any sort be present, the doses necessary to obtain results are high because insulin in the presence of infection apparently loses a considerable portion of its potency. After the patient regains consciousness the situation is much easier to handle and he is commonly back on his usual routine within a week. I would like to emphasize here that patients may be brought out of coma only to slip back in within 36 or 48 hours, so that caution is always to be maintained and over-confidence to be shunned.

In the successful treatment of any case of coma it is necessary to have the patient hospitalized and the nurses and physicians in attendance should stay with the patient until improvement occurs. In the writer's opinion diabetic coma stands out pre-eminently above all others as a medical emergency.

At first glance a discussion of the different phases of diabetic coma may seem unnecessary. It is a condition which has long been well known and about which a great deal has been written. However, when one considers carefully the number of deaths still due to coma, despite the fact that we have at our command almost specific treatment, then it seems evident to the writer that no apology need be offered for this discussion. Experience establishes the knowledge that prompt action will save life and that delay is fatal. It is much simpler to prevent coma than to treat it and this can be accomplished by determined effort on the part of the physician.

Because of the laws of human frailty and error coma cases doubtless will always occur from time to time but with renewed effort on our part the future should show us a marked decline of the death rate from diabetic coma which at present maintains.

REFERENCES

- ¹E. P. Joslin: *Journal A. M. A.*, July 6, 1929, Volume 93, page 33.
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A CLINICAL SURVEY OF THE ACTION OF THEOCALCIN*†‡

By W. S. LOVE, JR., M.D.**
BALTIMORE, MD.

The salts of theobromine and other purine-bases have long been considered of value as diuretics^{1,2,3} and by some of value in the treatment of angina pectoris^{4,5,6} and vascular hypertension. I shall not make any attempt to review the rather voluminous literature on this subject. The use of these drugs has, however, not become general except possibly as diuretics. They are unpleasant to take and frequently produce untoward symptoms, especially of gastric origin. There has recently become available a preparation of theobromine known as theocalcin which is the calcium salt of theobromine and salicylic acid.

In this study twenty-seven patients have been observed to determine the effect of this drug in producing diuresis, relieving angina pectoris and reducing arterial hypertension. Several patients offered opportunities for observing more than one effect of the drug, so that fifteen observations have been made upon diuresis produced, thirteen upon high blood pressure, and seven upon the relief afforded patients suffering with angina pectoris. It has also been noted whether any untoward symptoms occurred in those treated and when possible, whether a tolerance to theocalcin was developed, with a loss of subsequent beneficial action. All cardiac patients who received digitalis were digitalized at least ten days before starting theocalcin, and the urinary output had reached a stationary point.

Of the fifteen patients studied in regard to the diuretic effect of theocalcin five had arteriosclerotic cardiovascular disease with congestive heart failure, one of these had a moderate hypertension; three had chronic rheumatic cardiovascular disease with mitral stenosis

*Read before the Baltimore City Medical Society, February 15, 1929.

†From the Department of Medicine, University of Maryland, School of Medicine.

‡Submitted for publication June 20, 1929.

**University of Maryland, Class of 1923.

TABLE I
Diuretic Effect of Theocalcin with Notation on Development of Tolerance
and Occurrence of Untoward Symptoms

Patient	Age Sex	Diagnosis	Theo- calcin Daily	Average Intake c.c.	Urine before c.c.	Greatest Diuresis c.c.	Tolerance Established	Untoward Symptoms
1	74 F	Art. Hyp. C. V. D., Congestive Heart Failure.	45 grs. 60 grs.	1200	700	1000 7th day	Effective during 3 weeks.	None.
2	51 M	Art. C. V. D., Bundle Branch Block, Aortic Insuff. Failure.	30 grs.	1200 to 2000	500	2200 8th day	Effective off and on for 3 months.	None.
3	64 F	Art. C. V. D., Con- gestive Heart Fail- ure.	22.5 grs. 30 grs.	1200	400	2100 4th day	Effective 19 days and then wore off. Large dose, less effect, shorter duration.	None.
4	73 M	Art. C. V. D., Coro- nary Thrombosis, Angina Pectoris, Failure.	30 grs. 45 grs.	1200	200	1650 11th day	Effective off and on for 2 months.	None.
5	60 M	Art. C. V. D., Chronic Recurrent Failure and Edema.	30 grs. 4 days per wk.	Patient ambulant and at work, has remained edema free 3 months.				None.
6	21 M	R. C. V. D. Mitral Stenosis, Congestive Failure.	22.5 grs.	1000	200	1600 5th day	Yes.	None.
7	12 M	R. C. V. D. Mitral Stenosis, Congestive Failure.	22.5 grs.	800	150	675 4th day	One short course only.	Nausea.
8	7 F	R. C. V. D. Mitral Stenosis, Congestive Failure.	22.5 grs.	800	500	1500 3rd day	Yes.	None.
9	45 M	Luetic C. V. D., Aortic Insuff., Congestive Failure.	30 grs.	1000	255	1250 6th day	One short course only.	None.
10	53 M	Luetic C. V. D., Aortic Insuff., Congestive Failure, Chronic.	30 grs. 4 days per wk.	Patient ambulant and working, has remained edema free 3 months.				None.
11	54 F	Chronic Nephritis and Acute Exacerba- tion, Hypertension Uremia.	60 grs.	3000 to 4000	600	3280 7th day	One short course only.	None.
12	43 F	Chronic Nephritis and Acute Exacerbation, Hypertension Ure- mia.	60 grs.	3000 to 4000	1500	2400 5th day	Disc. 6th day.	Vomiting due to Uremia.
13	43 F	Chronic Nephritis, Hypertension, Bor- derline Uremia.	22.5 grs.	2000	470	2000 13th day	Maintained 19 days. Second course in- effective in 60 gr. dose.	None.
14	50 F	Hypertensive C. V. D., Cardiac Symptoms.	45 grs. to 60 grs.	5000	1500	4500 6th day	Maintained 24 days and drug discon- tinued.	None.
15	50 F	Hypertensive C. V. D., Borderline Failure.	45 grs. to 60 grs.	2500	1500	2450 5th day	One course, 10 days.	None.

and congestive heart failure; two had syphilitic cardiovascular disease with aortic insufficiency and congestive failure; two had chronic glomerular nephritis with acute exacerbations and uremia; one chronic nephritis with uremia, and two hypertensive cardiovascular disease with slight impairment of the kidneys in secreting phenolsulphonephthalein, and early symptoms of cardiac failure. The effect of theocalcin as a diuretic in these cases is shown in Table I. It is seen that in each case an effective diuresis has been produced and in some the result has been striking. It will be noted that in most of the cases the maximum diuresis has not been produced until after the fifth day. Several of these patients as noted in Table I were under observation for one course only. Of those observed over some time three patients Nos. 6, 8, and 13 developed a tolerance following the initial diuresis and further courses or continuance of theocalcin produced no appreciable diuresis. One patient, No. 3, lost the diuretic effect on continuance of the original dose, but regained it on a larger dosage for a short time. Four patients, Nos. 1, 2, 4, and 14, continued to show a diuresis whenever theocalcin was used over periods of time ranging up to three months. Patients Nos. 5 and 10 kept no fluid charts. They were ambulatory patients at light work with chronic failure, well marked edema and shortness of breath. Digitalis had not markedly improved them. With the addition of theocalcin grs. 30 four days a week, they became edema free, symptomatically much better and have remained so for three months.

The fluid chart of patient No. 4 is shown in Figure I. This patient is seventy-three years old. He has a marked generalized arteriosclerosis and two weeks before these observations had an attack of coronary thrombosis followed by repeated attacks of cardiac pain and congestive heart failure. This case will be presented in greater detail when discussing angina pectoris.

Fahrenkamp⁷ has recommended the use of theocalcin in the treatment of vascular hypertension and shows two curves with rather marked drops in the blood pressure level following this form of therapy. He notes however that the blood pressure again rises when the theocalcin is discontinued. In my series thirteen patients with elevated blood pressure have been treated with theocalcin (Table II). Only three showed any noteworthy fall in pressure. These three patients, Nos. 11, 18, 19, were all highly nervous women. They had all been seen several times in the preceding month in my office and

had had high pressures at each visit. Their family physicians reported that the blood pressure had been high for a year or more in each case. Each of these patients had a definite fall following the use of theocalcin. The amount used varied from 30 to 60 grs.

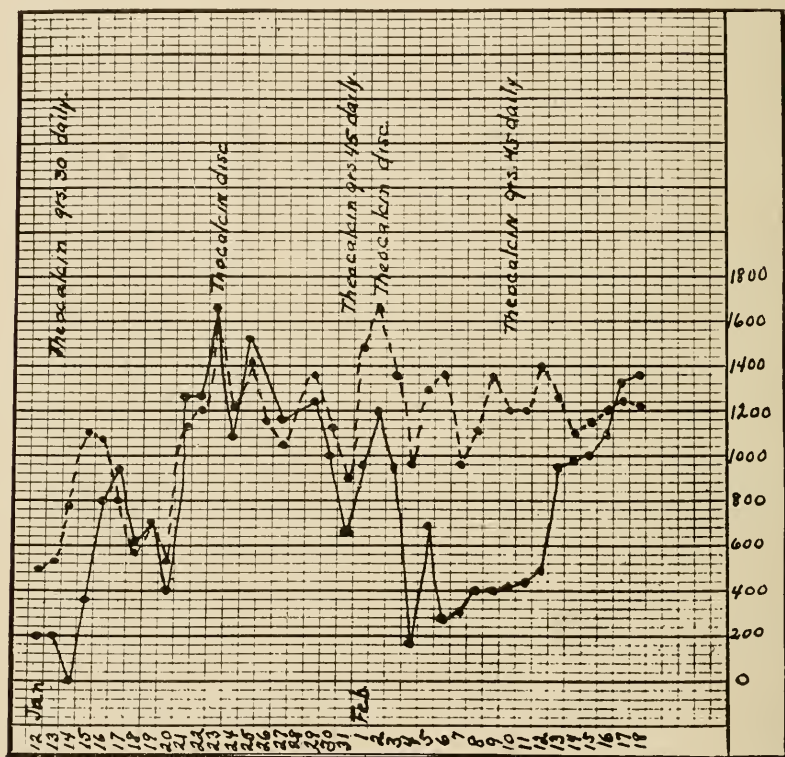


FIG. 1. Patient IV.
Solid line—Urine output in CC.
Broken line—Fluid Intake in CC.

daily. In two of these cases I am unable to say how long the drop has been maintained. Case 19 takes 30 grs. four days a week and the lowered blood pressure has been maintained over a period of three months. These observations would lead me to concur in the opinion that theocalcin is of value in hypertension where there may be a nervous element, but of little value in other forms. The blood pressure chart of patient 1, is shown in Figure II.

TABLE II
Effect of Theocalcin upon Hypertension

Patient	Sex Age	Diagnosis	Theocalcin Daily	Blood Pressure Before	Greatest Fall in Pressure	Average B. P. After	Benefit	Untoward Symptom
16	72 F	Hypertensive C. V. D.	45 grs. 3 wks.	180 / 95		180 / 95	None.	None.
11	54 F	Chronic Nephritis and Acute Exacerbation, Uremia.	60 grs. 10 days	200 / 100		220 / 110	None.	None.
17	58 M	Hypertensive C. V. D. Angina Pectoris.	30 grs. 14 days, twice	200 / 105		190 / 105	None.	None.
1	74 F	Art. Hyp. C. V. D. Congestive Failure.	34 grs. to 60 grs. 3 wks.	190 / 100	135 / 65 12th da.	140 / 75	Marked.	None.
13	43 F	Chronic Nephritis, Hypertension, Borderline Uremia.	22.5 grs.	190 / 110		200 / 115	None.	None.
			60 grs.	220 / 130		220 / 130	None.	None.
18	54 F	Essential Hypertension.	30 grs.	190 / 95	120 / 78 2nd wk.	130 / 80	Marked.	None.
19	60 F	Hypertensive Art. C. V. D.	30 grs.	200 / 105	150 / 90 2nd wk.	160 170 / 80 95 maintained 3 mos.	Moderate.	None.
20	58 M	Hyp. Art. C. V. D.	30 grs. 3 wks.	210 / 110		210 / 110	None.	None.
21	52 F	Hyp. C. V. D.	30 grs. 4 wks.	190 / 110		190 / 110	None.	None.
22	51 M	Hyp. C. V. D.	37.5 grs. 2 wks.	190 / 105		190 / 105	None.	None.
14	50 F	Hyp. C. V. D., Cardiac Symptoms.	45 grs. to 60 grs. 2 wks.	220 / 140	200 / 110 10th da.	200 / 120	Slight.	None.
15	50 F	Hyp. C. V. D., Borderline Failure.	45 grs. and 60 grs. 12 days.	195 / 105		195 / 105	None.	None.
12	43 F	Chronic Nephritis and Acute Exacerbation, Hypertension Uremia.	45 grs. and 60 grs.	200 / 110		220 / 115	None. Discontinued 6th day.	Vomiting, due to Uremia.

Seven cases of angina pectoris were studied, including three of arteriosclerotic cardiovascular disease, two of arteriosclerotic cardiovascular disease also having had one attack of coronary thrombosis, one of the arteriosclerotic cardiovascular disease associated with hypertension, and one of hypertensive cardiovascular disease without

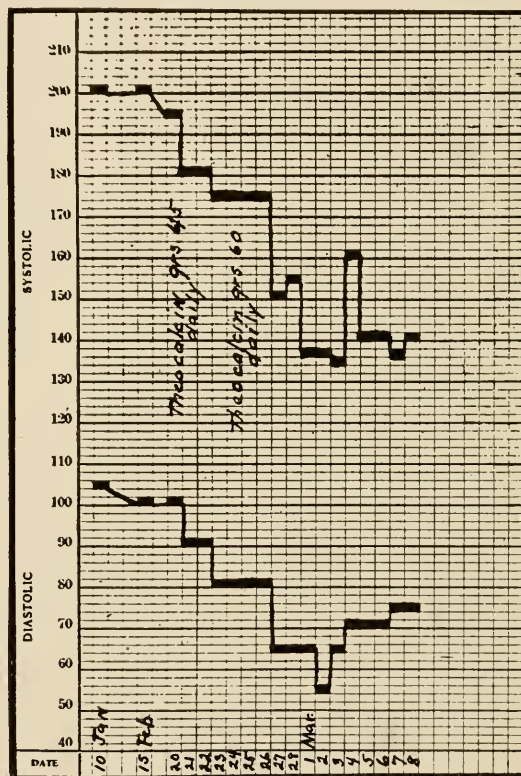


FIG. II. Blood Pressure Chart of Patient I.

demonstrable arteriosclerosis (Table III). The last was the only patient to receive no benefit. This patient, No. 17, was a white male, fifty-eight years old, with a blood pressure ranging from 190 to 210 systolic and 105 to 115 diastolic. The heart was moderately enlarged, but otherwise negative. He also complained of vertigo. He received two courses, 30 grs. daily, each of two weeks duration. He averaged four to five moderate attacks of angina weekly. The attacks were not altered in frequency nor in severity and his blood

pressure remained the same. Larger doses were not prescribed because the patient lived in the country and could not come in for observation.

TABLE III
Effect of Theocalcin in the Relief of Angina Pectoris

Patient	Age Sex	Diagnosis	Theocalcin Daily	Untoward Symptoms	Effect
23	65 M	Art. C. V. D., Angina Pectoris.	30 grs.	None.	Complete relief during last month. Very limited activity.
24	60 M	Art. C. V. D., Angina Pectoris.	30 grs. 4 days per wk.	None.	Complete relief.
25	65 M	Hyp. Art. C. V. D., Angina Pectoris.	30 grs. 4 days per wk.	None.	Marked relief. Attacks less severe and not frequent.
26	64 M	Art. C. V. D., Angina Pectoris.	30 grs. 4 days per wk.	None.	Marked relief.
17	58 M	Hypertensive C. V. D., Angina Pectoris.	30 grs. 14 days twice.	None.	None.
27	42 M	Coronary Thrombosis followed by Anginal attacks.	30 grs. to 30 grs. 4 days per wk.	None.	Marked Relief.
4	73 M	Art. C. V. D., Coronary Thrombosis, Angina Pectoris, Failure.	30 grs. to 45 grs.	None.	Complete relief from pain.

One of the patients with coronary thrombosis, No. 4, already mentioned in the discussion of the diuretic effect of theocalcin, a white man, seventy-three years old, with a marked arteriosclerosis, had had no pain previous to the occurrence of the thrombosis. Following this, while confined to bed, he had repeated attacks of agonizing substernal crushing pain, relieved by nitro-glycerine. He also developed congestive heart failure and a small pleural effusion on the right. He came under observation two weeks after the attack. He was given 45 grs. of theocalcin daily. He showed a well marked diuresis and was completely free of pain after the fourth day. There has been no further recurrence of the pain and the patient now takes 30 grs. daily four days a week. He is now ambulant, but confined to the house. There has at no time been any appreciable effect on the blood pressure, which has varied from 120 to 140 systolic and 90 to 125 diastolic.

The second patient with coronary thrombosis, No. 27, is a younger

man aged 42, who also had had no previous anginal symptoms. He shows a retinal sclerosis, but no generalized arteriosclerosis that is demonstrable. He first came under observation one week after the attack, and at that time was having crushing constricting retrosternal pain on the slightest exertion. He was not in bed. His blood pressure was 90 systolic, 70 diastolic. He was immediately put on 30 grs. of theocalcin a day. His pains became less frequent, and markedly less severe and the second week he had two slight attacks only. His blood pressure had risen to 115 systolic, 75 diastolic. He lived in the country and when he ran out of theocalcin did not obtain more. In two weeks he came back very much worse, again having pain on relatively slight exertion. He was given theocalcin 30 grs. daily and at present is taking 30 grs. four days a week. While not entirely free of pain, he is markedly relieved, the attacks being much less frequent and of less severity.

Patient No. 23, aged 65, had frequent pains of anginal type, even occurring while in bed. They continued to occur when the patient was put at absolute rest. He was given theocalcin 30 grs. daily and obtained complete relief in four days. He is now ambulant, but with moderate restrictions in his activities. The other three patients have received partial relief, as shown in Table III.

Gilbert and Kerr⁸ in a recent article on the results obtained in the treatment of angina pectoris with the purine base diuretics used theocalcin in thirty-nine cases. They report marked benefit in twenty-seven, moderate in three, slight in two, and no effect in seven. There were slight untoward symptoms in seven patients.

SUMMARY

1. Theocalcin is an efficient diuretic which can be used in large doses. It rarely produces untoward symptoms and when they occur they are mild. In this series a slight gastric disturbance occurred in one patient. When used over a prolonged period of time, or when used in repeated courses it tends to become less effective in producing diuresis. The maximum diuresis in the patients observed was delayed, but lasted for some time.

2. In the treatment of hypertension it was found to be of value in reducing the blood pressure in only three of thirteen patients. The nervous element probably played a large part in producing hypertension in these three patients. In a number of other patients

with normal blood pressure, theocalcin had no tendency to lower it. This suggests that it may be effective in relieving vascular spasm.

3. It is of great value in the continuous treatment of angina pectoris, especially that of arteriosclerotic origin. It is suggested that it be given in doses of from 30 to 45 grains a day, four or five days a week. In the recurrent anginal attacks often following coronary thrombosis, it is found to afford relief.

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MENOPAUSAL BLEEDING

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When one speaks of menopausal bleeding, the thought of cancer at once comes to mind. No criticism can be made of such a mental reflex, for a subconscious association of this kind indicates a praiseworthy alertness and preparedness against the gravest cause of hemorrhage at or near the middle period of life. As one old clinician used to say, "Cancer will rarely be overlooked by the man who has cancer on the brain."

It need scarcely be said that abnormal bleeding in women of the middle epoch of life may be due to many other causes than cancer. I need only mention such perfectly benign conditions as incomplete miscarriage, uterine myomata, benign polypi, adnexal inflammation, etc. With most of these the diagnosis is simple enough. There are, however, two types of hemorrhage which are rather characteristically associated with women at the menopausal period. The term menopausal is in this paper used, of course, in a rather broad sense, and may be taken to include the period between thirty-five and fifty years of age. The two types of bleeding to which I refer, and which are the only two which I shall discuss in this paper are (1) the so-called functional bleeding, and (2) the bleeding associated with cancer.

FUNCTIONAL UTERINE BLEEDING

With most cases of abnormal bleeding, some definite structural lesion can be demonstrated in some part or other of the generative tract. There is, however, a rather large group of cases in which the most careful pelvic examination reveals no anatomic lesion at all, and in which the bleeding, nevertheless, may be troublesome and perhaps even alarming. Cases of this kind have in the past been usually referred to as "idiopathic," but are now better designated as functional. They are most often seen at the menopausal age, but are not rare at or near puberty. They may, however, occur at any age during reproductive life. When they occur in women of middle life, their importance is obvious, for they are at once brought into diagnostic juxtaposition with cancer.

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The diagnosis of these cases is easily made by curetting and microscopic examination, and it can not be positively made in any other way. The microscope, in cases of this group, almost invariably reveals a picture designated as hyperplasia of the endome-



FIG. 1. The typical Swiss-cheese pattern of benign hyperplasia of the endometrium. The patient was 46 years old, and had been bleeding continuously for 4 weeks, with menorrhagia for many months before this.

trium, the characteristics of which I have fully described in several previous publications¹. Suffice it to say that it is characterized by an increase in the number of both the epithelial and stromal elements, and that the most important diagnostic feature is what I have designated as a Swiss cheese pattern of the glands (Fig. 1). Some of the latter are large and cystic, others very small, giving

rise to a distinctive pattern not to be mistaken, on the one hand, for any of the normal phases of the menstrual histological cycle, or, on the other hand, for any form of malignancy.

The question at once suggests itself as to why we speak of this type of bleeding as functional if it is associated with such a definite endometrial lesion. The answer is that the endometrial condition is just as definitely a mere response to a disordered ovarian function as are the widely varying normal cyclical changes in the endometrium to a normal ovarian function. This is not a mere hypothesis, for it can be supported by convincing evidence, as I have shown elsewhere.

In some of these cases the endometrium is enormously overgrown and perhaps polypoid, constituting the condition which has often wrongly been designated as "polypoid endometritis." Genuine endometritis, as a matter of fact, almost never assumes a polypoid form. When such enormous polypoid overgrowth exists, the curette may bring away large quantities of the tissue, so that, if the patient be of the cancer age and if the surgeon is unfamiliar with the gross appearance of benign and malignant lesions of the endometrium, the generative organs may be needlessly sacrificed under the wrong diagnosis of adenocarcinoma of the body of the uterus. In other cases the endometrium may show little or no gross overgrowth, but the microscopic pattern is the same.

I have been led to stress this particular type of benign endometrial disease not only because of its great frequency and obvious importance, but because of the fact that its recognition has not by any means become general. Little will be found on the subject as yet in many otherwise excellent text-books, for text-books are notoriously a lap or two behind the real line of progress. It can be seen at once that if the cervix is normal and no intra-pelvic pathology can be demonstrated by careful pelvic examination, i.e., if the bleeding is of endometrial origin, the cause can be revealed only by diagnostic curettement. Most important is the microscopic examination of the tissue removed. It is unsurgical and often dangerously culpable to omit this, for often the treatment is entirely contingent upon the pathological findings.

I have discussed the treatment of functional bleeding at various ages fully in the articles to which I have already alluded². Suffice it to say that, once the functional nature of uterine bleeding is established, its further treatment in women at the menopausal age is

simple and effective. Such women have lived their reproductive lives, so that the question of further pregnancies rarely need be considered. The proper procedure, therefore, is to bring about a cessation of ovarian function, not by operation, but by radiotherapy. Either radium or X-ray can be utilized. The former is perhaps more precise and certain, but requires short hospitalization and usually at least a gas anaesthesia. I have therefore more frequently employed the X-ray treatment, which yields results equally satisfactory. In most cases the menstrual function is prematurely abolished, although in some, after a variable time, it may again reassert itself. If it does, and if it is excessive, another series of X-ray treatments will ordinarily bring about permanent disappearance. It is in the treatment of these functional hemorrhages that radiotherapy has perhaps its most brilliant gynecological application.

CANCER OF THE UTERUS

So much has been written as to the importance of suspecting cancer in all cases of abnormal bleeding in women at or beyond the middle period of life that the subject may almost be said to have become stale and hackneyed. And yet women are still dying by the thousands every year from this disease, and, what is even more deplorable, thousands are still coming to treatment in stages of the disease which leave little room for hope as to its success. What is the reason for this?

In the first place, as with malignant disease elsewhere, there is a stage extending from its very inception to a point at which symptoms begin to appear. There are perhaps a few cancers—though very few—which are so malignant that the woman may not have a chance, for she is virtually doomed before being given warning at all by bleeding or other symptoms.

Far more often the fatal delay occurs in the stage between the first appearance of ominous symptoms and the examination by the physician. It is a shortening of this stage which is the desired goal of the campaign of popular education. This great movement is of comparatively recent origin, but it is assuming larger and larger proportions, especially under the sponsorship of such organizations as the American Society for the Control of Cancer and the American Medical Association. When such educational work is carried out along intelligent lines, there can be no doubt as to the great good

accomplished. Results have already begun to show themselves in the greater proportion of patients reporting for examination in a comparatively early stage of the disease.

The third stage of the disease is the one comprising the period between the first medical examination of the patient, usually by her family doctor, and the institution of proper treatment. It is this stage which I shall emphasize in this paper, for it is the one for which we, as medical men, are directly responsible. There is probably no doctor nowadays who does not know the abnormal bleeding or discharge at middle life may mean cancer. And yet there are unfortunately many who, not from ignorance but from a peculiar apathy, or else a lack of thoroughness, delay in seeing that proper treatment is instituted at the earliest possible moment.

No physician, except the very few who are hopelessly unconscientious, will fail to make at least a simple pelvic examination in women with suspicious symptoms. Again, probably no physician will fail to recognize advanced cancer if the disease is located in the cervix, as it usually is. In such cases, the examining finger will at once encounter a large friable cauliflower mass, or else will reveal an eaten-out crater-like ulcer. Diagnosis in such cases is distressingly easy, but the point is how much good it will do the patient, for she is almost certainly doomed anyhow.

On the other hand, suppose the physician finds no such lesion as that described above, or perhaps no lesion of the cervix at all. In the latter case, especially if the bleeding has occurred in a woman who has already passed the menopause, he should at once suspect cancer within the uterus, where it can not be felt, i.e., adenocarcinoma of the body or cervix. Under these circumstances he should explain to the woman, in simple and unalarming fashion, the importance of clearing up the doubt by diagnostic curetting and microscopic examination. Few women will object to this, and, if cancer is found, they will be richly rewarded, especially if the malignancy is in the fundus, as it most often is in such cases. Cancer of this variety gives extremely favorable results if operated on reasonably early, and even in some fairly advanced cases.

Again, if the cervix, instead of the advanced lesions above described, presents only an indurated area on one or other lip, or if there is an area of eversion or erosion covered by fine sprout-like outgrowths, with perhaps some superficial ulceration and such vascu-

larity that it bleeds on slightest touch (Fig. 2 and 3), the plan of action adopted by the physician will determine whether or not he is alert and intelligent. If not, he will assure the patient and himself that there is nothing seriously wrong because there is no cauliflower growth and no crater ulcer, which he may have been taught years ago to be distinctive of cancer. In the same way he had been taught that the symptoms of appendicitis are abdominal pain, distention of the abdomen, obstinate vomiting, hippocratic facies, rapid pulse,

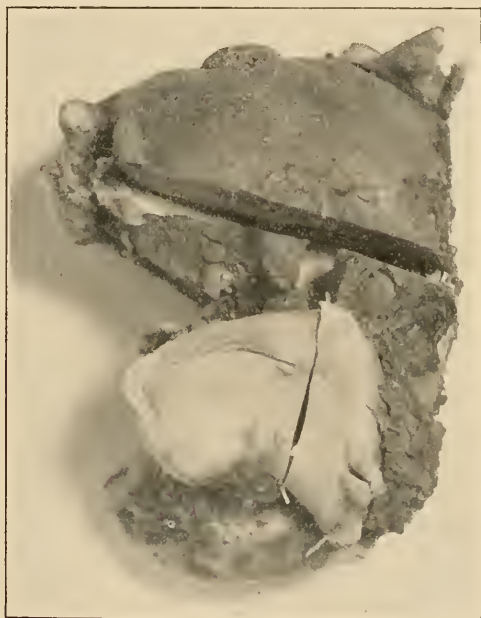


FIG. 2. A cervix showing a large eroded area suspicious of cancer. The diagnosis was made by biopsy and a panhysterectomy done, with excellent prospects for permanent cure. The tubes and ovaries were, of course, also removed, though not shown in the picture. The patient was 43 years old, with slight intermenstrual bleeding for several months. The microscopic picture is shown in Fig. 3.

and high fever—symptoms which we recognize as those of the late stages of peritonitis so often complicating appendicitis.

If, on the other hand, the examining physician is intelligently alert, he will know that in its earlier stages cancer assumes just the picture I have above described, and he will not be happy until the question is definitely settled. He will in some cases be unable to do this by merely looking at or feeling the cervix, nor, for that matter, can

even an expert gynecologist do this in every case. But, in practically every instance, the matter can be decisively settled by clipping out a piece from the most suspicious area and examining it microscopically. If this biopsy, so-called, reveals no cancer, the patient can go

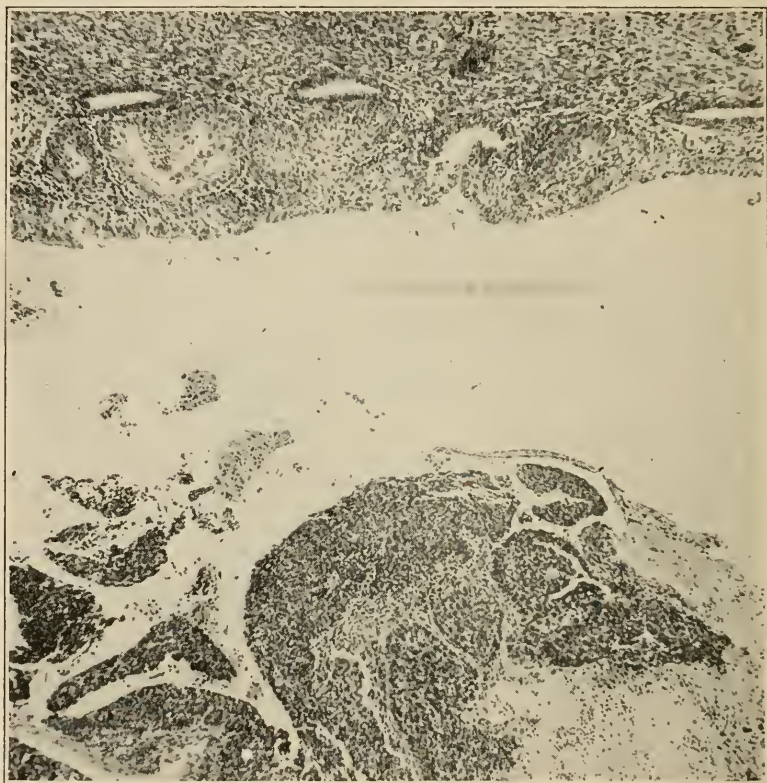


FIG. 3. On one lip of the cervix (the lower) is definite cancer. The other shows the pseudo-malignant inflammatory hyperplasia which is often mistaken for cancer, and which is shown to a more marked degree in Fig. 4.

on her way rejoicing and the doctor can feel that he has handled a diagnostic problem as it should be handled. If, on the other hand, definite cancer is shown, the patient ought to have a good chance for cure, at least a fifty-fifty chance in the earliest group, whether radium or operation be selected.

This plan is certainly much more intelligent than that of taking a chance that the lesion is probably benign, and thus allowing a

patient to let the golden moment slip by. And it is certainly better than the plan of doing radical operations, or resorting to radium therapy, on suspicion alone.

It can not be too strongly emphasized, however, that the biopsy must be done properly, and, above all, that the microscopic examination be made by someone who is really qualified to pass upon tissues removed from this region of the body. Otherwise, more harm than good may result from it. This point needs double accentuation because of the rather specialized nature of the pathologic picture encountered in the uterus, and especially in the cervix, so that even an excellent general pathologist may go wrong rather easily in this field. There are, for example, certain peculiar and very common inflammatory pictures encountered in the cervix which have often been mistaken for cancer (Fig. 3 and 4). I have discussed this whole question fully, from the pathologic and clinical aspects, in a recent paper, to which the reader is referred for fuller details.²

As to the treatment of cancer, once it has been definitely diagnosed, only the briefest summary need be given in this paper. With regard to cervical cancer, radium has, of course, changed completely the plan of treatment. Formerly the only decision the gynecologist had to make was as to whether or not the cancer was operable, i.e., whether a radical operation could be done without too much risk to the patient and with at least some chance of permanent cure. When the use of radium was begun, it was at first only as a palliative measure in surgically hopeless cases. Some of these were much retarded, although, in the early days of radium technique, some were definitely harmed. Occasionally, however, a permanent cure was reported even in quite advanced cases.

It was natural, therefore, for the use of radium to be extended to cases not so apparently hopeless, i.e., to only moderately advanced or borderline cases. An even greater proportion of good results was obtained, so that, in more recent years, the field of radium therapy has been so much extended that in many of the best clinics in the world, surgery has been entirely abandoned in the treatment of cervical cancer. There are many hospital internes today who have never seen a radical panhysterectomy for cervical cancer.

The results of this plan appear to have justified it fully, indicating that in these earlier, operable cases radium yields just as large a proportion of cures as surgery, without the inevitable primary



FIG. 4. Such pictures as this have often been mistaken for cancer, but they are particularly benign. This patient was only 23 years old, and has remained well after the simple excision of the cervical polyp from which the section was taken.

mortality of the latter. On the other hand, the total number of reports upon the five year results in the treatment of these early cases is not yet large, so that there are still many gynecologists who advocate radical operation upon early cases if the patient is a favorable subject for operation. This position, it seems to me, is a rational one if the following conditions are fulfilled: (1) the cancer should be in a really early stage; (2) the patient should be in excellent condition, i.e., she must be not too old or too obese, and she should be free of any organic disease; (3) the surgeon should

be really expert in the performance of the radical operation for cancer of the uterus. If these conditions be not present, a patient will certainly have a better chance for permanent cure, with least immediate danger, by radium than by surgery.

As far as cancer of the uterine body is concerned, the practice is quite the reverse, for here radical operation is preferred to radium unless there is some definite contraindication to surgical procedures. The reason for this is the fact that surgery has given excellent results in this field, and that radium can not as yet be said to have proved its equality, much less its superiority, in this respect. It is only fair to say, however, that with improved technique, some radiologists have achieved very satisfactory results in the treatment of corporeal cancer, so that it is not impossible that here also the aggressive radiologist will displace his surgical confrère. For the present, however, the majority of gynecologists still advocate surgical operation as the method of choice in this field.

After all, however, it is not the method of treatment which determines the fate of the patient nearly so much as the factor of the stage of the disease at which treatment is instituted. Neither radium nor surgery gives results in advanced cases, while either yields comparatively favorable results in early cases. The moral is plain here, as in the treatment of cancer in any region. We must try to increase our proportion of early cases (1) by educating women as to the possible significance of abnormal bleeding or discharge beyond the age of thirty; and (2) by thorough examination of every woman who presents herself with suspicious symptoms.

Finally, in this examination, we should lay aside our old concept of the lesions of cervical cancer, for the cauliflower growth and the foul crater ulcer of the text-book are really pictures of late and almost hopeless cancer. Rather should we familiarize ourselves with the picture of early cancer, and of those lesions which on examination can only be considered suspicious. It is in these groups that we have every right to expect an excellent proportion of permanent cures.

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A NOTE ON THE CULTIVATION OF TUBERCLE BACILLI*

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The value of a cultural method for the diagnosis of tuberculosis to take the place of the now prevalent inoculation of guinea pigs is well recognized. To be of any great service such a method must fulfill three conditions—first, it must be simple—free from complicated manipulations; secondly, it must yield a large percentage of positive results quickly; thirdly, it must be successful in the hands of one no more skilled in laboratory procedures than the usual interne.

When Robert Koch isolated the tubercle bacillus in 1884, he fully appreciated that his procedure was too laborious and uncertain to be of anything but academic interest. The history of tuberculosis since that memorable publication, however, has been punctuated by many methods devised either to simplify the cultivation of the organism for laboratory studies or to supercede the more costly guinea pig in practical diagnosis. The addition of glycerine to media by Nocard and Roux increased the growth of pure cultures on artificial media, while the studies of Pawlowsky gave us a more suitable and easily prepared medium in the form of glycerinated potato. The anti-formin method of Uhlenhuth made use of the superior resisting powers of the tubercle bacillus to disinfectants which easily destroy the contaminating organisms which because of their greater capacity for growth, choke out the more slowly growing tubercle bacilli in cultures. The application of anti-formin in the hands of Griffith became less complicated, but failed to become popular. Petroff, following out the researches of Churchman added gentian violet, because of its bacteriostatic powers, to the glycerine-egg medium. He obtained brilliant results with his medium by inoculating the surface directly with the contaminated material which had previously been treated with sodium hydroxide. Other workers, however, because of the rigid technique were unable to rival his 95.5% positive cultures. In our hands the method was highly disappointing

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and quite unreliable as a routine procedure. Yet it still remains a very valuable laboratory measure.

Recently, Corper and his workers have proposed a new technique based on the bactericidal power of inorganic acids, as pointed out



Figure 1.

1. Culture from clear chest fluid—12 weeks growth.
2. Culture from rt. sterno-clavicular joint—7 weeks growth.
3. Culture from sputum—12 weeks growth.
4. Culture from sputum—12 weeks growth.
5. Culture from rt. elbow joint—7 weeks growth.
6. Culture from purulent chest fluid, negative on smear—7 weeks growth.

by Loewenstein, and the bacteriostatic properties of media containing gentian violet. Using 6% sulphuric or 3% hydrochloric acid to kill off the contaminating organisms, Corper inoculates tubes containing his gentian violet potato medium.

Preparation of Medium: Clean, large, smooth potatoes are carefully washed and with the aid of a cork borer are cut into cylinders of such a size as to fit the available culture tubes. Each cylinder

so formed is cut diagonally so as to form two equal pieces presenting a smooth, slanting surface, and immediately submerged in a solution containing 1% sodium carbonate and 1-75,000 gentian violet (1 c.c. of 1% sol. to 750 c.c. of 1% sod. carbonate sol.). After one to two hours the potatoes are removed, dried on a clean towel and single pieces put into culture tubes. One and a half cubic centimeters of a 5% solution of glycerine in water are then added to each tube after which the tubes are plugged with cotton and sterilized in the autoclave at 15 pounds pressure for 30 minutes.

Collection of Specimens: The only precaution taken in the collection of specimens of sputum is to have the patient deposit in a sterile petri dish the material derived from a good cough after the mouth has been cleaned with an alkaline mouth wash. In the case of fluids an attempt is made to concentrate the cellular portion, thereby cutting down the amount of precipitable proteins derived from the serum which may interfere with the handling of the material. This is accomplished in the case of the clear fluids by collecting 20-50 c.c. in a flask with enough sodium citrate to prevent clotting, while 5-50 c.c. of pus are diluted with 25-100 c.c. of sterile salt in a sterile flask. In either case the cellular debris obtained by immediate centrifugalization or 24 hours in the ice box is used.

Method: In practice 1-2 c.c. of the contaminated material is ground up in a centrifuge tube (or we some times use a sterile petri dish or small mortar) with an equal volume of 6% sulphuric or 3% hydrochloric acid using a blunted stirring rod as a pestle. The tube containing the material is now closed with a sterile cork and incubated at 37 degrees C for 30 minutes during which time the contents are occasionally shaken. At the end of this time 10-15 c.c. of sterile salt solution are added; thoroughly mixed by shaking, and the whole centrifuged at moderate speed for 10-30 minutes. The sediment, after the supernatant liquid has been drained off, is seeded on the surface of the potato using for the purpose glass tubing drawn out into capillary pipettes and sterilized by dry heat. The tubes are then sealed with paraffin, and placed in a dark incubator at 37 degrees C.

Appearance of Growth: In the laboratory from two to six tubes are inoculated and in from two to ten weeks small whitish, moist colonies can be seen on the surface of the potato in some of the tubes. All colonies do not appear simultaneously in the same tube,

and there are often some days intervening between the appearance of growth in the several tubes. No explanation is available for this phenomenon unless it is to be attributed to the difference in the volume of material inoculated on the separate tubes, as was noticed by Clough in her studies on the occurrence of tubercle bacilli in the blood stream, where she noticed that the speed of appearance of growth was decreased by the seeding of large amounts of material. As time passes the whitish moist colonies become dry, wrinkled, and of a light brown or buff color. The medium changes from a powder violet to a dirty, yellowish brown, as the colonies grow older. Whether the change in the color of the medium will be a constant for all strains of the organism or will characterize certain races as was observed by Petroff, it is too early as yet to say definitely. In the older cultures colonies likewise appeared on the sides of the tubes where moisture collected and bits of medium from the bottom of the tube adhered. All colonies examined so far have shown a pure strain and subcultures have remained uncontaminated.

We have used this method in culturing positive sputa, purulent and clear fluids derived from chests and joints which were clinically tuberculous. Work has only been started on urine and feces. Most of the fluids were negative on microscopic examination. We have not been able to approach the experience of Gardner who found over 90% of his specimens of pus positive in smear. While as yet our studies are not either complete or extensive, nevertheless, we feel justified in the light of our experience in calling this procedure to the attention of clinicians. In no case that was clinically tuberculous have we failed to grow the organism on culture, and what was to us more gratifying the colonies appeared in our cultures while the guinea pigs inoculated at the same time were apparently enjoying the very best of health.

There is of course the ever present danger of confusion arising from the presence of saprophytic acid-fast organisms in the contaminated materials used for the inoculation of the tubes. This should cause little difficulty since they develop rapidly and are luxuriant before the tubercle bacilli ordinarily make their appearance. There is also some compensation in the fact that organisms pathogenic for man but unable to cause more than a local infection in the guinea pig have been obtained on culture by Corper, Loewenstein and other workers.

Conclusion. There has been outlined a technique for the diagnosis of tuberculosis by culture originally proposed by Corper which in its simplicity and ease of execution is adaptable to use wherever bacteriology can be performed. It deserves further investigation checked by guinea pig inoculation.

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A GENEROUS GIFT

The School of Medicine has been named residuary legatee in the last will and testament of Dr. John F. B. Weaver, of Manchester, Maryland. Dr. Weaver was one of the School's oldest alumni. His singular generosity will ultimately make the School the recipient of the bulk of an estate for which the Orphan's Court has required the executors to give a bond of \$150,000. Dr. Weaver requested that the legacy be used for the establishment of a "professorship, fellowship or research fund" according as the Trustees of the Endowment Fund shall deem advisable. The Trustees gratefully signify their willingness to accept the legacy and to carry out the requests made by the testator. The research foundation made possible by Dr. Weaver's generosity will be named after him.

Dr. Weaver was born in Bachman's Valley, near Manchester, Maryland, in 1841. His early education was received in a nearby academy and in the Hanover Seminary. From here he came to the School of Medicine, University of Maryland. He received his degree of Doctor of Medicine in 1864.

Shortly after graduation he returned to Manchester, where he married Elizabeth Walters, who died in 1916. His life was that of a general practitioner who took a keen interest in the community about him and was active in many ways to promote its progress. Until 1916, he was State Health Officer for the Sixth District,



DR. JOHN F. B. WEAVER

1841-1929

which embraced his town. His death occurred October 27, 1929, as the result of carcinoma.

Although the foundation of Dr. Weaver's fortune rested upon his medical practice, he combined with his professional skill an unusual amount of business ability. Those who knew him have declared that, unlike most physicians who play with investments, he showed rare intuition in placing his money correctly, and almost never made a mistake.

The Trustees of the Endowment Fund appreciate deeply Dr. Weaver's wisdom and foresight which led him to make provision at the School of Medicine for a phase of education that is greatly in need of assistance.

BOOK REVIEW

Diseases of the Blood. By Paul W. Clough, M.D. Harper & Brothers, New York.

A concise, practical, yet reasonably thorough little manual answering a very real need for an up-to-date English monograph on Haematology. The book should be invaluable to practitioners and students, for it is not only a "quick and ready" reference but manages as well to summarize with adroit terseness all of the more important recent advances and newer thoughts on the subject.

The illustrative colored plates are well produced and one regrets only their sparsity.

H. R. P.

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DR. HARRY E. KNIPP

University of Maryland, Class of 1887

Obituary notice by a friend of over forty years standing, to whom and his family the doctor had ministered for forty years.

Harry E. Knipp was born in Baltimore, Md., October 25, 1867, and after finishing his earlier education, determined to enter practice of Medicine; he matriculated at the University of Maryland, graduating therefrom at the age of nineteen. He served in the Clinic at the U. of M. Hospital, until coming of age, he received his license, immediately becoming active and popular, he built up an extensive practice, taxing his endurance to the limit.

He was one of those rare men of extraordinary ability and high character, of lovable and cheerful disposition, whose virtues distinguish them in every station.

Devoted to his profession, he loved his work of healing and the relief of suffering and distress, and thus became beloved by thousands of people to whom he had ministered during his long practice.

He was always fine, gentle, kind, firm and courageous; up to the moment in the knowledge of medicines of the modern physician, always ready to call in the Specialist for his patient's good.

He was a member of the Temple Christian Church and an active, devoted and liberal supporter of it.

He is survived by his widow, Mrs. Eunice Sibley Knipp, a young daughter, Elizabeth, aged thirteen, also Miss Minnie B. and Dr. George A Knipp, of Baltimore, children of a former marriage.

August 14th, 1929, the Doctor passed to his well earned reward. His many friends were shocked at the loss of their friend, that kindly, patient cheerful gentleman. That able, conscientious and faithful Physician. That quiet, sympathetic, good man.

It must be; that the Christ whom he worshipped, the Divine Healer, in whose footsteps he so faithfully trod, will especially bless him, and will care for his loved ones until that Great Day.

LEND A HAND

In an article of the October issue of the BULLETIN there was a statement that it was the purpose of the University of Maryland, School of Medicine, to "keep pace with the constant changes in the fields of medicine and surgery" thereby maintaining a position in these fields that will be a credit to the great State which it represents. To have done this reflects great credit to everyone who has allied himself, or herself, with such a cause. To satisfactorily progress in this endeavor necessitates that every interested person become a "cog in the wheel" and advocate its purpose in their daily contacts. There must be numerous auxiliaries surrounding the institution that take active part in its activities. Fortunately there are now a number of such organizations all working together in an effort to reach this goal. To us, as active alumni, it seems that none of these organizations should be more energetic than the Medical Alumni Association. Certainly no group understands the

needs and purposes of the Medical School so well as its alumni. The purpose of our organization is to help both students and graduates thereby promoting interest for the future welfare of the school. Will you, as graduates, not show your interest by becoming active members? We know many of you possess weighty expert judgment that would be of untold value to us in carrying out the aims of the Association.

UNIVERSITY ALUMNI CELEBRATE

At the meeting of the Southern Medical Association held in Miami, Florida, November 19-22 the Miami branch of the University of Maryland Alumni Association gave a dinner at the Miami Country Club. The attendance was all that could be hoped for and there was intense enthusiasm manifested. The success of this meeting and dinner was greatly due to the efforts of Dr. Lee Elgin, class of 1925. His untiring efforts were rewarded by splendid attendance and marked enthusiasm.

Dr. Elgin acted as toastmaster at the dinner. Among the speakers of the evening were: Dr. Edgerton, Dr. Kirby, Dr. Toulson, Dr. Timberlake, Dr. Ballinger, Dr. Roberts, Dr. Adkins, Dr. Vinson and Dr. Gichner.

Dr. Edgerton, of the class of 1877, one of the oldest living alumni, was present and looked the picture of health. Those present at the convention were:

- Dr. B. J. Bond, 1904, Tallahassee, Fla.
- Dr. E. H. Teeter, 1910, Jacksonville, Fla.
- Dr. W. C. Chowning, 1904, New Smyrna, Fla.
- Dr. E. G. Ballenger, 1901, Atlanta, Ga.
- Dr. Frank H. Walke, 1912, Shreveport, La.
- Dr. C. A. Andrews, 1909, Tampa, Fla.
- Dr. W. H. Toulson, 1913, Baltimore, Md.
- Dr. H. D. Clark, 1914, Fort Pierce, Fla.
- Dr. Henry E. Palmer, 1892, Tallahassee, Fla.
- Dr. Julius Friedenwald, 1890, Baltimore, Md.
- Dr. F. H. Laskey, 1915, Fallston, N. C.
- Dr. F. A. Holden, 1920, Baltimore, Md.
- Dr. George E. Shannon, 1922, Baltimore, Md.
- Dr. George C. Shannon, 1883, Baltimore, Md.
- Dr. J. L. Egerton, 1877, Hendersonville, N. C.
- Dr. J. W. Carroll, 1903, Wallace, N. C.
- Dr. J. E. Evans, 1916, Wilmington, N. C.

Dr. C. W. Roberts, 1906, Atlanta, Ga.
Dr. Taylor Lewis, 1904, Miami, Fla.
Dr. Joseph E. Gichner, 1891, Baltimore, Md.
Dr. H. W. Henry, 1891, New Smyrna, Fla.
Dr. L. A. Riser, 1908, Greenville, S. C.
Dr. Ben Gold, 1920, Shelby, N. C.
Dr. T. M. Davis, 1914, Greenville, S. C.
Dr. R. O. Lyell, 1902, Miami, Fla.
Dr. S. B. Fowler, 1918, Tampa, Fla.
Dr. T. W. Seay, 1929, E. Spencer, N. C.
Dr. P. P. Vinson, 1914, Rochester, Minn.
Dr. Harry M. Robinson, 1909, Baltimore, Md.
Dr. W. J. B. Orr, 1920, Smithfield, N. C.
Dr. Herbert Schoenrich, 1907, Baltimore, Md.
Dr. Frank Kirby, 1892, Baltimore, Md.
Dr. Louie M. Limbaugh, 1914, Jacksonville, Fla.

DR. KRAUSE'S LECTURE AND MOVIE

Dr. L. A. M. Krause, who during the spring and summer toured the Sahara, Palestine, Egypt and the Soudan, gave an interesting lecture at University of Maryland, November 7, 1929, illustrated by moving pictures on tribal life of the natives. The political life in Palestine between the Jews and Arabs was dwelt upon at some length. This lecture was well attended and was thoroughly enjoyed by all who availed themselves of this opportunity.

WANTED

Mrs. Briscoe, librarian, requests that we ask the readers of this magazine if anyone will be so kind as to help her in obtaining a 1915 issue of the *Terra Mariae*. She also states that she has extra copies of the 1906-1907 and 1913 issues. Anyone desiring the latter issues or who have copies of the former, will do the library a great favor by communicating with Mrs. Ruth Lee Briscoe, Librarian, University of Maryland, Baltimore, Md.

ITEM

We note in the November issue of the *Ars Medici*, the Journal of the American Medical Association of Vienna, that Dr. Gideon M. Van Poole, class of 1899, was president of that society in 1929.



A. W. VALENTINE, M. D.

Graduate of the University of Maryland—1904. Vice-President of the Alumni Association. Member of the American Medical Association, Washington, Maryland, and D. C. Medical Society. Engaged in the practice of medicine at Washington, D. C.

PARTIAL LIST OF SUBSCRIBERS TO BOND ISSUE

The following is a partial list of subscribers to the Alumni Bond issue that appears in each BULLETIN :

Dr. Frank W. Keating, Owings Mills, Maryland.
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Dr. G. Milton Linthicum, Baltimore, Maryland.
Dr. William S. Love, Baltimore, Maryland.
Dr. Nathan Winslow, Baltimore, Maryland.
Dr. M. LeRoy Lumpkin, Baltimore, Maryland.
Dr. Frank S. Lynn, Baltimore, Maryland.
Dr. Jos. W. Holland, Baltimore, Maryland.
Dr. Arthur M. Shipley, Baltimore, Maryland.

There are still a few stock certificates on hand. Anyone wishing to participate in this worthy cause can do so by helping to take up the remaining bonds. A single bond may be obtained for as small an amount as five dollars.

STUDENT COUNCIL

Attention is called, in this issue of the BULLETIN, that there is close cooperation between the Alumni Association and the student body. It occurred to us that the Alumni throughout the country would be interested in some of the activities of the student body from time to time. In order to show the splendid spirit of cooperation in our school, we are taking the liberty to write the following article relative to the Student Council.

The Student Council of the University of Maryland, School of Medicine, was first organized in January, 1919, by the student body. It consisted of three students from each of the four classes. A constitution was drawn up and definite rules made. The primary purpose of the organization was to take active part in all matters arising between student body and faculty.

With this purpose in view the council has enjoyed a commendable career. Such activities as the following have been carried out partially because of their efforts. Active records are kept of the attendance of the instructors in classes. Due respect is encouraged toward faculty members both in and outside class. Refuse cans were purchased for waste paper and are kept near the entrance of the University building. At the request of the Dean the student

body in a group welcomed the University of Maryland medical unit on their return from overseas following the World War. Special talks are given by members of the faculty to the student body and under the auspices of the Council a school paper was printed regularly. Theatre benefits were arranged and the proceeds given to the Children's Clinic. A drinking fountain has been installed in the hallway of the University building. Receptions are arranged for students from other schools visiting the University of Maryland and welcome programmes are arranged each year for the incoming freshman classes. In addition, a list of respectable boarding houses is kept for the benefit of students who make their initial arrival in the city. Lastly, a handbook of general information is compiled each year for both students and visitors.

In order to help members of the freshman class, the faculty members have been induced to serve in the capacity of advisors for various groups in this class. This has proven a benefit to both students and faculty.

During the years 1923-1927 the activities of the Council lagged. During the latter year, however, there was a reorganization with practically the same purpose in view. Advisors were appointed both from the faculty and alumni association. In the early part of this scholastic year a faculty-council meeting was held for the purpose of creating a spirit of helpfulness between student body and faculty.

Looking toward the future, the student body through its council is now endeavoring to obtain better ventilation in the amphitheater of the University Hospital. They have asked that questions be printed and given to each student at the beginning of each formal examination. They are endeavoring to devise ways and means of caring for medical students who become ill during their scholastic years. In addition they are working in conjunction with the alumni association toward erecting a memorial to the late Dr. Joseph W. Holland.



CHARLES EMIL BRACK, M. D.

Graduate of P. & S.—1897. Member of the Board of Directors of the Alumni Association. Treasurer of the Baltimore City Medical Society. Member of the American Medical Association, Southern Medical Association, American College of Surgeons, Medical and Chirurgical Faculty of Maryland. Engaged in the practice of obstetrics at Baltimore, Md.

DEATHS

DR. HUGH BRANTLEY YORK, Williamston, N. C.; P. & S., class of 1906; aged 47; died, August 30, 1929, of cerebral hemorrhage.

DR. CHAUNCEY T. SCUDDER, Cumberland, Md.; P. & S., class of 1895; aged 57; died, October 3, 1929, of a self-inflicted bullet wound.

DR. DANIEL E. KIESS, Hughesville, Pa., P. & S., class of 1886; aged 65; died, August 30, 1929, of cerebral embolism and arteriosclerosis.

DR. FRANK D. KINSLEY, Compton, Calif.; P. & S., class of 1882; aged 70; died, May 15, 1929, of cardiac disease.

DR. GEORGE LEWIS ALEXIS HAMILTON, Los Angeles, Calif.; B. M. C., class of 1900; aged 60; died, July 29, 1929, of acute gangrenous cholecystitis.

DR. WALTER GUSTAVE HOUSEAL, Newberry, N. C.; class of 1886; aged 68; died, September 15, 1929, of diabetes mellitus.

DR. EMORY E. BELL, Chincoteague, Va.; P. & S., class of 1904; aged 54; formerly assistant surgeon, U. S. Public Health Service; died, September 4, 1929, of nephritis.

DR. GEORGE HEDGES GROVE, Washington, D. C., class of 1918; aged 36; died, September 18, 1929, of a self-inflicted bullet wound.

DR. JAMES THORNTON GREELEY, Nashua, N. H.; B. M. C., class of 1891; aged 67; died, August 29, 1929, of cardiac embolism.

DR. WILLIAM C. FISHER, Newark, N. J.; B. M. C., class of 1908; aged 53; died, September 25, 1929, of arteriosclerosis and hypertension.

DR. LEWIS BURCHFIELD ROBINSON, Glendale, Calif.; class of 1886; aged 66; died, April 4, 1929, of chronic myocarditis and cerebral hemorrhage.

DR. MORRIS C. ROBINS, San Pedro, Calif.; class of 1894; aged 58; died, September 28, 1929, of lobar pneumonia. Dr. Robins shared the first honors of his class with the late Dr. George Dobbins, of Baltimore. After graduating he was associated for a time with the department of internal medicine at his alma mater. He was a man of strong personality, an excellent teacher and well liked both by his colleagues and his pupils. In the early part of this century, he went to the Pacific Northwest and about 12 years ago he removed from Portland, Oregon to San Pedro where he soon acquired a large practice, and assumed a prominent position in his profession.

DR. VIRGINIUS WILTON GALE, Kansas City, Mo.; class of 1873; aged 76; died, August 30, 1929.

DR. JOHN SLOAN MILLER, Clymer, Pa.; P. & S., class of 1890; aged 66; died, July 14, 1929, of cancer of the larynx.

DR. HARRY A. NAYLOR, Pikesville, Md.; class of 1900; aged 51; Member of the Medical Corps, U. S. Army, during the World War; died, November 14, 1929, of angina pectoris. He was a son of the late Dr. Henry Louis P. Naylor, class of 1860.

DR. HENSON MARLOW HAZELTON, Lancaster, Ohio; P. & S., class of 1893; aged 58; died, October 11, 1929, of angina pectoris.

DR. FRANK NORMAN HILLIS, Baltimore, Md.; P. & S., class of 1912; aged 46; died, September 19, 1929, of coronary thrombosis.

DR. LOUIS F. CORNMANN, Clarksburg, W. Va.; P. & S., class of 1895; aged 62; died, October 1, 1929.

DR. RALPH NEWBERRY PRENTISS, Brooklyn, N. Y.; B. M. C., class of 1900 and Columbia University College of Physicians and Surgeons, class of 1905; aged 48; died, October 28, 1929, of cardiac disease and cerebral hemorrhage.

DR. HERBERT L. KNEISLEY, Hagerstown, Md.; class of 1905; aged 51, veteran of the Spanish-American War; died, October 10, 1929, of myocarditis.

DR. C. MARION DODSON, Baltimore, Md.; B. M. C., class of 1883; aged 87; Civil War veteran, died, November 22, 1929. At the outbreak of the Civil War, Dr. Dodson enlisted in the United States Navy at Philadelphia, as an apothecary's assistant, and was sent to the Gulf of Mexico to join the West Gulf squadron under Admiral Farragut. When a yellow fever epidemic broke out on the Arkansas he volunteered for service aboard that ship. Later he was assigned to the Hollyhock, and was aboard that vessel when she pursued the Confederate ship Webb and in the struggle that followed he captured that vessel's flag just before she blew up.

DR. S. HAWKINS INGRAM, Baltimore, Md.; class of 1919, aged 60; formerly associated with the pediatric department of his alma mater; died, October 14, 1929, of a cerebral abscess consecutive to an operation on his nasal sinuses.

DR. JOHN F. B. WEAVER, Manchester, Md.; class of 1864; aged 88; died, October 29, 1929.

DR. JOHN JOSEPH FITZGERALD, Haverhill, Mass.; B. M. C., class of 1903; aged 52; died, October 19, 1929, of chronic nephritis, cerebral hemorrhage and chronic myocarditis.

DR. WILLIAM S. BOYD, Salters Depot, S. C.; class of 1886; aged 67; died, September 30, 1929, of acute dilation of the heart.



CHARLE. R. FOUTZ, A. B., M. D.

Graduate of the University of Maryland—1897. Member of the Board of Directors of the Alumni Association. Member of the American Medical Association, Carroll County Medical Society, Southern Medical Association. Engaged in the practice of medicine at Westminster, Md.

ADDRESSES WANTED

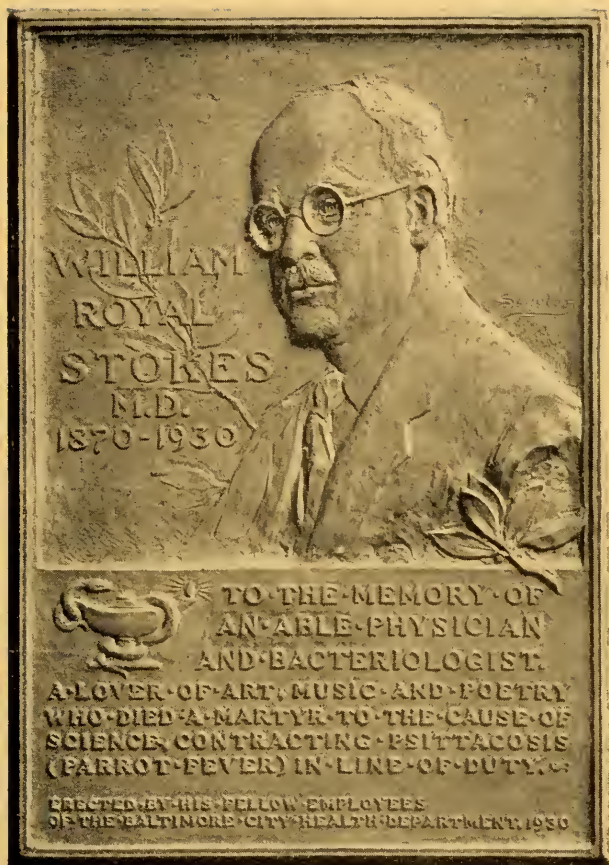
Name.	(Last Address)
Dr. Albert J. Aptaker	Beth David Hospital, 113th St., N. Y. C.
Dr. Sidney H. Adler	220 W. 87th St., N. Y. C.
Dr. Anthony M. Bacevicze ..	161 Franklin St., Elizabeth, N. J.
Dr. Metellus Rowan Barclay	2814 Broadway, Chicago, Ill.
Dr. Charles A. Barlow	319 7th St., Des Moines, Ia.
Dr. John M. Benton	1319 S. 11th St., Birmingham, Ala.
Dr. Hyman Belsky	948 E. 22nd St., N. Y. C.
Dr. Robert Bernard	Flushing Hospital, Flushing, L. I.
Dr. George C. Bryan	1836 N. Wilton St., Los Angeles, Calif.
Dr. J. M. Brice	Woodruff, N. C.
Dr. H. F. Burrus	Springfield, Mass.
Dr. Herman Clark	Trenton, N. J.
Dr. Malcolm Currie	Vildalia, Ga.
Dr. Bascomb Chipley	Waverly Hill Sanatorium, Valley Station, Ky.
Dr. Marbury Coe	Springfield, Pa.
Dr. M. Talbert Dalton	Joshua Green Building, Seattle, Wash.
Dr. Wm. L. Davenport	Glade Spring, Va.
Dr. John Dorsey	San Diego, Calif.
Dr. George A. Duncan	University Hospital, Baltimore, Md.
Dr. Chauncey Elmo Duvall ..	Fortress Monroe, Va.
Dr. Isidore Eckert	324 E. 4th St., N. Y. C.
Dr. H. Wilson Francher, Jr.	103 Enfield St., New Britain, Conn.
Dr. Benno Hugh Fultz.....	511 Nevada St., San Antonio, Tex.
Dr. Joseph E. Franklin	310 E. North Ave., Baltimore, Md.
Dr. Wirt Graham	Pueblo, Colo.
Dr. A. Grollman	St. Louis Jewish Hospital, St. Louis, Mo.
Dr. Herbert Gorham	Winston-Salem, N. C.
Dr. Samuel J. Hankins	W. Balto., General Hospital, Balto., Md.
Dr. C. E. Hawks	311 Montgomery Ave., Balto, Md.
Dr. Alexander S. Hawkins ..	Clermont, Fla.
Dr. John Hawkins	3901 Hadley Square, Frederick, Md.
Dr. Buford Hendrix	Md. General Hospital, Balto, Md.
Dr. Charles H. Holliday	6019 Rock Ridge Blvd., Oakland, Calif.
Dr. Aaron Jacobowitz	Jenkins Arcade Bldg., Pittsburgh, Pa.
Dr. Fayner A. Kayser	Michigan Hospital, Ann Arbor, Mich.

- Dr. Elmer A. Kell Rawlins, Wyo.
 Dr. Henry Kennard U. S. Veteran Bureau.
 Dr. Eugene A. Kennedy 128 Main St., Woonsocket, R. I.
 Dr. T. Lenahan Pittsburgh, Pa.
 Dr. Samuel Marton Newark City Hospital, Newark, N. J.
 Dr. John S. Mason 1624 Franklin St., Oakland, Calif.
 Dr. Alvin McClung Pickens, W. Va.
 Dr. Patrick McCue 406 Harvard St., Brookline, Mass.
 Dr. Solon W. Merrill Long Island City, N. Y.
 Dr. David Merksamer Kington Ave. Hospital, Brooklyn, N. Y.
 Dr. Leandro G. Montalvo .. 6317 Broadway Terrace, Oakland, Calif.
 Dr. Henry Oshrin West New York, New Jersey.
 Dr. Guy S. Peppers Titusville, Fla.
 Dr. Charles E. Pfeiffer 1137 Light St., Balto., Md.
 Dr. Bert Leone Phillips Skykomish, Wash.
 Dr. Brisey Milton Rhodes .. St. Joseph's Hospital, Balto, Md.
 Dr. Marand Rothrock Mt. Pleasant Mills, Pa.
 Dr. William Thomas Ruark . 1704 Chestnut St., Philadelphia, Pa.
 Dr. Edward J. Ryan..... 305 40th St., Philadelphia, Pa.
 Dr. Arthur Anthony Scullion St. Vincent Hospital, N. Y. C.
 Dr. Jesse Showalter Union Memorial Hospital, Baltimore, Md.
 Dr. Wladmir J. Sieminowicz 1386 Milwaukee Ave., Chicago, Ill.
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 Dr. Joseph S. Stovin 214 E. 17th St., N. Y. C.
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 Dr. Peter L. Swank Salisbury, Pa.
 Dr. Thomas P. Thompson.... St. Joseph's Hospital, Baltimore, Md.
 Dr. Nathan H. Tkach Coney Island Hospital, Brooklyn, N. Y.
 Dr. Thomas R. Turner Sherman, Tex.
 Dr. Henry Clinton Warlick .. Widen, W. Va.

Any information relative to the above will be greatly appreciated. Because of incorrect addresses a considerable number of communications are returned to us. Any aid that our readers can give us, will save us a great deal of trouble and help us to keep our files up to date.



DR. WILLIAM ROYAL STOKES



Work by Hans Schuler, Sculptor

UNVEILING
OF A
BRONZE MEMORIAL TABLET
OF
Dr. William Royal Stokes
IN THE MUNICIPAL OFFICE BUILDING
BALTIMORE

EIGHT FIFTEEN O'CLOCK, NOVEMBER TWENTY-SIXTH

1930



PROGRAM

Invocation The Reverend Harry Stansbury Weyrich
Minister in Charge, Emmanuel Church

Address Dr. William H. Welch
Professor of History of Medicine
Johns Hopkins School of Medicine

Address Dr. Hugh S. Cumming
Surgeon General, United States Public Health Service

Address and Presentation Dr. C. Hampson Jones
Commissioner of Health

Acceptance Hon. William F. Broening
Mayor of Baltimore

Unveiling of Tablet Dr. J. Frederick Hempel
Assistant Commissioner of Health

Benediction

REMEMBER ME

When I have passed unto the bourne
Whence none return, pray do not mourn,
But think of me in steadfast faith
As being a carefree, happy wraith.

And would you my remembrance keep,
I'd have you smile instead of weep,
And think of days I spent with you
When sun was bright, and skies were blue.

Perhaps if you can find the time
Again to voice some tender rhyme
Which I have written, who can tell
But I may hear the words as well?

Forget the troubles that I had,
Forget the times when I was sad;
Remember but the part of me
That merry was, and light and free.

The legacy that I shall leave
Will only be a make-believe
That I am with you once again
To both repeat some old refrain.

Again to chant some chorus gay,
Or trill a merry roundelay,
To utter foolish quip and jest,
Or eat and drink with pagan zest.

To wander through the golden past,
All shackles cast away at last,
And once again to dream with you
The dream that never could come true.

—*William Royal Stokes.*

BULLETIN

OF THE

SCHOOL OF MEDICINE

UNIVERSITY OF MARYLAND

VOL. XIV

APRIL, 1930

No. 4

As a tribute of love, esteem and affection, this issue of the BULLETIN is dedicated to the memory of Doctor WILLIAM ROYAL STOKES, class of 1891, professor of bacteriology, University of Maryland, a distinguished scientist, a martyr to his professional zeal, a victim of psittacosis, contracted in the line of duty. He has enrolled his name upon the scroll of immortality. He has glorified the escutcheon of his alma mater.

“Greater love hath no man shown than this,
that a man lay down his life for his friend.”

In sacrificing his life that others might live, Dr. Stokes has proven a worthy exemplar of the sentiment expressed in the motto of the Medical Alumni Association:

“Filius sim dignus istâ dignâ parente.”

Verily, he was a worthy son of that worthy parent.

THE USE OF SCARLET FEVER ANTITOXIN FOR PROPHYLAXIS*

By C. LORING JOSLIN, M.D.†

and

SAMUEL S. GLICK, M.D.‡

BALTIMORE, MD.

Since 1885 it has been known that hemolytic streptococci were found in the throat of scarlet fever patients. Doctors George and Gladys Dick, in 1923, produced experimental scarlet fever by swabbing the throat of a volunteer with a pure culture of hemolytic streptococcus taken from a case of scarlet fever, proving that the hemolytic streptococcus is the cause of scarlet fever. In 1924 they produced the Dick Test with Berkefeld filtrates of media in which the specific organism was grown.

Dochez and Sherman, in 1924, produced a Dochez serum by injecting horses with the entire culture containing both bacteria and toxin. This differs thus from the Dick serum in that the Dicks injected the horses with the pure toxin filtrate. They produced a pure antitoxin serum while Dochez's is both antibacterial and antitoxic. The Dochez serum is unconcentrated and produced severe serum reactions, and therefore was abandoned. The Dicks concentrated their serum, thus giving it increased antitoxic value with less serum reaction when given properly.

The present Dick antitoxin is standardized against the toxin, and its potency is expressed in the number of skin test doses of toxin neutralized by one c.c. of antitoxin. They found that a thousand skin test doses of toxin injected subcutaneously into susceptible individuals produced transient scarlet fever symptoms. That amount of antitoxin which will neutralize twenty times this amount of toxin has been used as the therapeutic dose. The prophylactic dose is one-half the therapeutic dose and both are given intramuscularly.

From the reports of many observers it is well recognized that scarlet fever antitoxin is a specific in the curative treatment of scar-

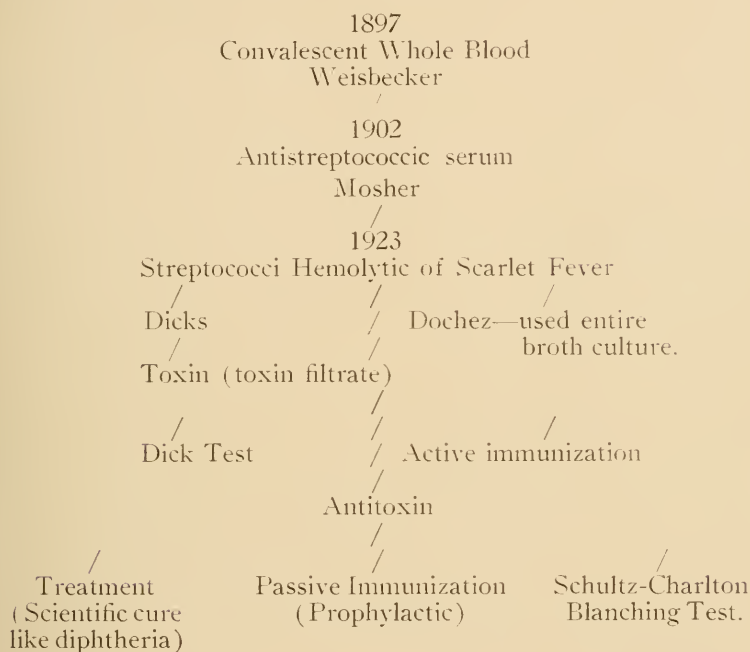
*From the Pediatric Department, University of Maryland.

†University of Maryland, class of 1912.

‡University of Maryland, class of 1927.

let fever, just as diphtheria antitoxin is specific in the treatment of diphtheria.

Hannah¹ gives the following interesting table describing the evolution of scarlet fever antitoxin:



At this time we will not discuss the curative treatment of scarlet fever, but deal only with scarlet fever antitoxin as a prophylactic measure. We are repeatedly asked by physicians and mothers as to the advisability of giving serum to protect the child who has been exposed to scarlet fever. Theoretically, this is advisable, practically, many observers feel that the serum has not been sufficiently improved to warrant one recommending it as a routine measure. Dochez², in an article entitled, "Treatment of Scarlet Fever with Antitoxin," states, "the advisability of the general use of antitoxin for the prophylaxis of scarlet fever, as is the practice in diphtheria, is a debatable question, and in some instances it is advisable to resort to other means of protection, as isolation, etc."

The Dicks³ are more enthusiastic as to its prophylactic use. They report its use in thirty-four susceptible individuals exposed to scar-

let fever, each of whom had a positive scarlet fever streptococcus throat culture, but had not developed the disease. None of these developed scarlet fever nor its complications, although some already had a sore throat and fever at the time of serum injection, showing that prophylactic antitoxin in sufficient amounts protects even after infection has occurred. In controlling an epidemic the Dicks⁴ in a recent article now advise performing the Dick Test and taking throat cultures for hemolytic streptococci from all exposed individuals. Those with positive Dick Tests and negative throat cultures should get active immunization with toxin* (five weekly injections); those with positive Dick Tests and positive throat cultures should get passive immunization with five c.c. of antitoxin (prophylactic). Passive protection lasts only two to three weeks, and therefore, active immunization with toxin should be begun in infected susceptibles one week after the dose of prophylactic antitoxin.

Owing to the absence of conclusive data to guide one concerning the use of scarlet fever antitoxin as a prophylactic means we are reporting the following observations. These were observed when attempting to passively immunize children of Saint Vincent's Infant Asylum, Baltimore, Maryland, during an outbreak of scarlet fever in the institution. These observations covered a period from December 15, 1926, to March 15, 1927. The procedure was as follows:

(A) Cultures were taken from the nose and throats of all children to ascertain the carriers.

(B) The Dick Test was given to determine those susceptible, excepting those who were convalescing from scarlet fever.

(C) Passive immunization was given to all children showing a positive Dick Test.

(D) Cultures from the nose and throat of the children immunized were repeated after immunization.

1. Number of children in institution. 103
2. Age limit: 3 weeks to 6 years.
3. Number exposed to scarlet fever. 103

*Toxin for active immunization against scarlet fever as recommended by the Dicks will probably be commercially available in the near future. It will then be possible to immunize against scarlet fever as it is now practised against diphtheria and small-pox.

4. Number showing positive Dick Test before immunization 30—29%
 Number showing negative Dick Test before immunization 49—47.5%
 Number showing suggestive positive Dick Test before immunization 3—2.8%
5. Number developing scarlet fever before immunization was begun (from June, 1926, to December, 1926) 28—27%
 Number developing scarlet fever during the week prior to beginning of immunization work 5—4.8%
6. Number developing scarlet fever after immunization was begun (period January to March 15, 1927) 4—3.8%
 - (a) Immunized cases (Dick positive) 1—1.0%
 This case developed one month after immunization.
 - (b) *Not* immunized (because of negative Dick Test) 3—2.9%
 One infant (under six months) developed scarlet fever, not immunized, had negative Dick Test.
7. Number with positive streptococci before immunization as shown by culture from

Nose	10—9.7%
Throat	35—34%
8. Number with positive streptococci after immunization (all reported negative) 0—0%
9. Number receiving serum 33—32%

	Total	Rec'd
	Census	Serum
Parke Davis	21—21.5%	63%
Lilly	11—10.8%	33.3%
10. Number with serum reactions 23—69.4%
 (percentage of those receiving serum)
 Parke Davis 12—36%
 Lilly 11—33.3%
11. The serum reactions appeared within 24 hours; the height was reached in 36 hours and lasted two to six days.

12. Type of reaction:

Parke Davis.....	(a) temperature only	2
	(b) rash without temperature.....	3
	(c) rash with temperature.....	5
	(d) fever, redness of skin, with urticarial edema of eyes and ankles.....	2
Lilly.....	(a) temperature only	8
	(b) flushed face, red eyes, temperature, rash on body	3

Summary:

A. No cases of scarlet fever developed in the immunized group of children in the first thirty days after immunization.

B. One child who had been immunized developed scarlet fever after thirty days.

C. Three cases of scarlet fever developed in children who were not immunized because of negative Dick Tests.

D. Streptococci disappeared from the nose and throat of the children receiving immunization as shown by cultures.

E. Sixty-nine per cent of the children immunized gave some evidence of serum reaction.

The Dicks¹, in their article on the control of scarlet fever, report that passive immunity with scarlet fever antitoxin lasts only from two to three weeks. This easily explains how the one child was able to develop a typical case of scarlet fever one month after prophylactic immunization.

We would like to include our observation on five other children who were exposed to scarlet fever and given the antitoxin without first testing for serum sensitiveness. There was a marked serum reaction in each case. Two of the children developed fever a marked erythema and urticaria, with pain in the joints, headache, stiff neck, positive Kernig's sign and in one case rigidity of the spine. We felt this was an acute serum reaction involving even the meninges; It was debated whether or not a spinal puncture should be performed as the condition suggested meningitis. Adrenalin therapy relieved these alarming and distressing symptoms readily. Scarlet fever antitoxin, at present, is not as refined as is diphtheria antitoxin and, therefore, must be given with care. It is best to test the patient for serum reaction first. This is done by injecting one drop intradermally (preferably over the buttocks) sufficient to form

a small wheal, then waiting from twenty to thirty minutes for a local reaction. If, after this time, the wheal has practically disappeared and there is no local erythema one can safely give the dose at once, preferably intramuscularly deep into the buttocks (the curative dose of antitoxin being ten c.c. and the prophylactic dose five c.c.). If, after the period of precautionary waiting, one notices a moderate erythema and an increase in the size of the wheal, one can still safely give the serum, but very slowly and in broken doses, consuming about five minutes in giving it. If there is a marked erythema of the buttocks with a large wheal, or if the patient, immediately upon injecting one drop intradermally, should develop a generalized serum rash (as occurred in two of our cases), it is advisable not to give the antitoxin, as one is liable to make the child quite ill.

Conclusions:

1. Scarlet fever antitoxin is useful as a prophylactic measure in preventing the spread of scarlet fever, especially in institutions.

2. It is not to be recommended for general prophylactic use, due to the following facts:

(a) Only a certain percentage of those exposed are susceptible.

(b) In its present unconcentrated state serum reactions are frequent and at times severe.

3. Passive immunization only protects for a period of three to four weeks.

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TYPHUS FEVER

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INTRODUCTION

In Maryland our primary interest in typhus fever is due to the fact that the disease is endemic in the state. Fifty-one cases have been reported to the State Department of Health since 1915, Baltimore city reporting 35 cases and 16 cases reported from the counties. Of the 51 cases, 6 terminated fatally.

The number of negative Widal's for typhoid fever reported by several laboratories, suggests that had a sufficient amount of blood been sent to the laboratory to permit of serological examinations for typhus fever, undulant fever and tularaemia, the clinical entity of many of these cases might have been definitely established.

HISTORICAL¹

The early history of typhus fever is shrouded in mystery, and it was not until the sixteenth century that it was defined under a specific symptom syndrome separating it from the plague.

The co-relation of famine and typhus fever was noted in the Anglo-Saxon Chronicle (1087). Stow's survey of London notes the deaths of jailers of Newgate and Ludgate and of 64 prisoners doubtless from lice transmitted typhus. The most remarkable clinical contributions are the original description of typhus fever by Fracastorius (1546) and of tabardillo (Spanish or Mexican typhus) by Francisco Bravo (1570). Typhus fever was epidemic in Italy in 1505 and 1524-30 and was described by Fracastorius (1533).

As "Gaol fever" it devastated the court rooms of the famous Black Assizes of Cambridge (1522), Oxford (1577) and Exeter (1589) by obvious lice transmission from the prisoners on trial. The louse infestation was no respecter of persons, as indicated by the long-handled curry combs which the Tudor ladies employed to scratch their backs. In Spain, after the siege of Granada (1489), when it broke out among the Castilian troops, typhus was called el tabardillo

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(a little cloak). The Aztec disease *matlazahuatl*, already known in Mexico in 1570-76, was shown to be identical with *tabardillo* by Stamm, (1861). The so-called Hungarian disease (*Morbus Hungaricus*), which spread all over Europe in 1501 and 1505-87, and was frequently epidemic in Italy and France, is now regarded as, in all probability, typhus fever. Tobias Cober (1606) in his *Medical Observation on Hungarian Camps*, gives a lengthy account of the prodrome and symptoms of typhus and notes the relation between typhus fever and pediculosis. Willis describes typhus among the Parliamentary troops at the siege of Reading (1643).

John Huxham (1692-1768) differentiated between the "putrid malignant" and the "slow nervous" fever, that is between typhus and typhoid. Lind (1716-1719) in his study of goal (typhus) fever recommended all the essentials of delousing, viz., bathing, clean apparel and baking of lice ridden clothing in ovens. Hufeland of Langensalza in 1806-7 and 1813 described typhus epidemics.

Typhus fever, was, especially prevalent during the long contest between Frederick the Great and Maria Theresa (1740-48), the Seven Years' War (1756-63) and the French Revolution (1789-99). The disease appeared and was particularly fatal at Prague (1742) and as "famine fever" in Ireland (1740), where a failure of the potato crop cost 80,000 lives.

At the time the clinical minutiae were well known and preventive measures at hand, yet disregarded as plainly sensed in Burns' lines "To a Louse." In 1774 John Howard had introduced his bill for the prevention of goal distemper, an admirable bit of sanitary legislation, the provisions of which were, however, largely evaded. During that period it was noted that typhus infection was commonplace in darkened, vermin infested houses.

William Stokes during the epidemic of typhus at Dublin in 1826, worked among the poor and had an attack of the disease himself in 1827.

Schonlein (1836) proposed the terms "typhus abdominalis" and "typhus exanthematicus" to differentiate these diseases. Gerhard of Philadelphia (1837) definitely separated typhus and typhoid fever; his differential diagnosis of typhus and typhoid in the United States at least settled the clinical and pathologic status of the two diseases. Virchow (1848) studied the epidemic of typhus fever in Upper Silesia, his recommendations including not only hygienic measures but

a large charity for these unfortunates. Jenner (1847), in England ten years later than Gerhard in America, from a clinical and pathological examination of 36 cases, separated typhus from typhoid.

In the records of the Civil War in this country 1,723 cases with 572 deaths were reported from 1861-1865, but the diagnosis is questioned by Woodward. In this connection, those who were privileged to attend the lectures on typhus fever by the late Dr. Thomas Latimer of Baltimore, may recall his statement that "those physicians and nurses who remained constantly in hospitals and were not provided with the means of personal hygiene and proper changes of clothing, contracted the disease, while those who left the hospitals daily and enjoyed the advantage of a daily bath and change of linen escaped infection." During a period of 25 years in Ireland among 1,230 physicians attached to institutions, 550 died of this disease.

A small outbreak occurred in the United States in Philadelphia (1883) and another in New York (1891-92). Cases have been reported from time to time among recently arrived immigrants. From 1900 to 1919 inclusive, 109 deaths from typhus occurred in the registration area of the United States.

Brill (1898-1911) studied and reported in New York upon several hundred cases of acute fever which he distinguished from typhoid. This was later shown by Anderson and Goldberger to be typhus fever.

There were but a few cases of typhus in the armies of Britain, France, Italy, the United States and Germany during the World War. In Serbia (1915) in April the deaths from this disease reached 9000 per day, and during that year it is said 150,000 people died of typhus. In Mexico City (1915) 11,000 cases were reported.

According to the report of the Health Committee of the League of Nations (1919-20) 20,000 cases occurred in Russia. Since the close of the Great War it has been estimated that over 3,000,000 cases of typhus have occurred in Russia, and in Poland (1920) 200,000 died from this disease, which number is considered a conservative estimate. Epidemiological investigations in Poland and Russia during 1919-1921, indicate that accurate morbidity and mortality rates were not available. Government officials on being questioned as to the number of cases and deaths, invariably answered, "No one knows, we are too hungry to ascertain."

EPIDEMIOLOGY

Typhus fever, as a rule is a disease of adults, though it does occur in children and during epidemics infants in arms have contracted the disease. As a rule it is most common among the age group 15 to 25 years of age. The attack rate among males and females is about equal.

One attack as a rule confers lasting immunity, but second attacks have been reported and one physician is reported to have died during the second attack of the disease.

Geographical Distribution: Typhus fever is essentially a disease of temperate and cold climates, but it also occurs in the tropics where it is known as tropical typhus.

The disease has occurred in epidemic form in most of the countries of the old world, notably, in recent years in Poland, Russia and Serbia. It has also been reported from Tripoli, Tunis, Algeria, Morocco, Persia and is known to be endemic in Asia, Japan, Peru, Mexico and the United States.

It is now recognized as having a greater distribution in the United States than has generally been believed. The majority of cases have been reported from the Atlantic seaboard and Gulf States.

The disease is endemic in seaports from New York southward. Alabama, Georgia and Florida have reported the greatest number of cases. Tampa, Pensacola, Mobile, New Orleans, Galveston, Houston and the Rio Grande Valley have been definitely established as foci of endemic typhus. California has also reported a number of cases, the majority occurring in or near Los Angeles in the southern part of the state.

Strains of Typhus in the United States: Mosser² (1929) from inoculation of serum from human typhus fever cases into guinea pigs concludes that the typhus which occurs in the southern United States is identical with Mexican typhus and is distinct from Brill's disease (typhus) observed in New York, which is of the European variety.

Seasonal Variation: The winter months show the greatest number of cases of the epidemic form. The reverse is true with the endemic form. In the United States the greatest number of cases have occurred during June, July, August, September, October and November.

For the years 1916-1923—eighty-two cases of typhus fever were reported from California—78 per cent occurring during the summer and fall. Maxcy³ in studying the seasonal variations of a large number of cases occurring throughout the United States has shown that the seasonal incidence is just the reverse to that of the old world epidemic type. But the difference in seasonal variation has suggested the possibility of some other parasite than the louse as an additional vector of the disease. Lice die in sustained warm temperatures. Also in the endemic form, multiple cases in the home are rare, which lends support to the belief that the louse is not the only ecto-parasite involved in the transmission of the disease.

Vectors of the Disease: Patton has shown that the bed bug is found along the northwest frontier of India and that the distribution of this bug curiously coincides with the distribution of typhus in India. In an epidemic occurring in a jail, the hospital was found infested with bed bugs; typhus occurred only in the hospital of the jail. On destruction of these pests, the epidemic ceased.

Sambon in Allbut and Rolliston's System of Medicine advances the theory that Rocky Mountain spotted fever and typhus are identical and suggests the tick as the vector of both diseases. In Glasgow the flea was suspected to be the cause of dissemination of typhus fever.

Wolbach⁴ (1922) and others agree that typhus fever, Rocky Mountain spotted fever and tsutsugamushi (of Japan) should be classified in one group, because they have strong clinical resemblances, and because each of them is essentially a disease of the peripheral blood vessels. The serological findings, and method of transmission may be regarded as additional evidence for a group classification.

As cross immunity between typhus and Rocky Mountain spotted fever does not occur in experimental animals, the two diseases may be considered as definitely separate diseases.

Wheatland⁵ (1926) described typhus fever near Toowoombor, Queensland, which was characterized by a clinical picture of endemic typhus, and in which the Weil-Felix reaction was positive in all cases, louse transmission could not be established. The cases all occurred among farm hands, in the vicinity of where an epizootic occurred among the field mice. Wheatland concluded that the disease was spread to man by some ecto-parasite of the mouse.

Alessandrini⁶ has observed a febrile disorder occurring in Rome, resembling typhus, which occurs from May to October, and especially in August. The cases occur sporadically, in various parts of the city but chiefly in the outlying sections. Contagion by direct contact was not shown—louse infestation of the patient was not observed. The disease developed in an environment in which there were dogs infested with ticks. Some of the patients stated they had found ticks on their person. The Weil-Felix reaction was positive in most of the cases, especially in adults and when taken in the advanced stage of the disease.

Fletcher⁷ in his report of the disease from the Federated Malay States observed that most of the cases occurred among those closely associated with cattle and those who frequented the grazing lands. He also observed that rats were numerous over the grazing lands, more numerous where cattle were kept. He considered that the rat acts as a reservoir of the disease and as a host for the larval and nymphal stages of the tick. He felt that the louse was not incriminated, though he states that lice were found on several of the patients and that multiple cases occurred in associates.

Virus of the Disease: Nicolle¹ (1909) by injecting the blood from the vein of a typhus patient, into a monkey produced in that animal a typical case of typhus fever, showing that the virus of the disease was present in the peripheral blood stream during the course of the disease. In the same year he transmitted the disease from an infected monkey to a non-infected monkey by the bite of an infected louse.

Wilder and Ricketts¹, working in Mexico, showed that the virus could be separated from the blood by passing the blood through a Berkefeld candle. These two workers observed bodies in the blood which they considered the causative organism of the disease.

Da Rocha Lima (1917) confirmed the findings of Wilder and Ricketts and named the organism *Rickettsia prowazeki*.

Wolbach⁴ (1922), working in Warsaw, after a most thorough and scientific investigation, came to the conclusion that *Rickettsia prowazeki* is the causative factor of typhus fever. The rickettsia bodies may be demonstrated in the blood about the fifth day after onset; they are slightly smaller than bacteria, occur characteristically in pairs, they fail to retain the stain by Gram's method, staining best with Giemsa's stain. They are non-motile and have resisted all

attempt at cultivation. The organisms are seldom found in the blood stream after the seventh day of the disease.

Transmission of the Disease: It has been definitely proven that epidemic typhus is spread by *Pediculus corporis* de Geer and according to Anderson and Goldberger by *P. capitis*.

The lice obtain the virus from a typhus fever patient from the fifth to twelfth day of the disease. After feeding upon a typhus patient, the insect requires from seven to nine days before it becomes infective, then remaining infective for the rest of its life. It has not been shown that the louse passes its infection on to the next generation as the tick does its infection with the virus of Rocky Mountain spotted fever.

Just how the louse introduces the rickettsia bodies into the human has not been ascertained exactly. The germ escapes from the alimentary tract of the louse with the feces and therefore may be introduced by scratching the site of the bite or by the mouth part of the louse becoming soiled with its own feces and thus introduced in the act of biting its host. In the transmission of plague by the flea it has been shown that the esophagus of the flea becomes plugged with *B. pestis* and on attempting to satisfy its thirst, is unable to complete the act of swallowing, it then regurgitates, and carries the *B. pestis* into the site of its bite. Such a mechanical obstruction by the rickettsia in the louse may cause a similar act and thus be one means of introducing the causative organisms into the host.

Considering typhus fever as a disease of the smaller blood vessels, Wolbach considers that for the ecto-parasite to become infected it is necessary for it to puncture one of the capillaries during feeding.

The epidemiological evidence to date, appears to incriminate not only the louse, but also the tick and bed bugs and probably some other ecto-parasite in the transmission of typhus. Several authorities, both in the United States and abroad, are of the opinion that rats and mice serve as a reservoir of the disease.

This only adds one more disease to which the rat is susceptible. He is known to suffer from tuberculosis and leprosy—to be a reservoir for plague and tularemia and to harbor paratyphoid organisms—the latter with which the rat has frequently contaminated man's food supply. Therefore, aside from economical reasons, there

are sufficient grounds upon which to base a war of extermination against these rodents.

From the epidemiological data, it may be stated that typhus fever is spread from man to man or from rodent to man by the louse, tick or other ecto-parasite which infest rats or other wild rodents. But more certainly typhus fever is not spread by jumping across air space.

SYMPTOMATOLOGY

Most of our communicable diseases have their milder types. Epidemic typhus of Europe has its milder counterpart in tropical typhus and endemic typhus as observed in the United States.

These milder types of typhus present the same general symptoms of the epidemic form though are seldom fatal. As typhus fever presents to the majority of people a disease which occurs in great epidemics, accompanied by great loss of life, the several types of the disease are considered separately.

EPIDEMIC TYPHUS

Headache: In no other disease is the predominating symptom so sharply defined as is *headache* in typhus fever. It is the outstanding symptom at the onset and so severe in type, even in the mildest cases, that the patient not only can state the day of its appearance, but frequently give the exact hour of onset. It is always described as severe, being frontal, occipital or general in character. A prodromal stage is said to exist but the symptoms are too vague to be of diagnostic value.

Chills: Second in prominence to headache, chills are most frequently noted. These are generally violent in nature and two or more chills occur during the first few days of the disease.

Gastro-Intestinal Disturbances: Vomiting is a frequent and distressing symptom of onset and has been noted in 50 per cent of the cases. Loss of appetite has been noted, but not so common as vomiting. Constipation is the rule, diarrhea being a rare condition.

Respiratory Symptoms: Bronchial catarrh is common and there is generally a mild to troublesome cough which lasts throughout the course of the disease.

General Malaise: Pain in the back and limbs has been noted but occupies a subordinate place to headache.

Mental Disturbances: Insomnia is frequently an early symptom. Mental disturbances occur early, even on the first day of onset the severe headache produces mental confusion or complete disorientation as to time, place and person. The mental disturbances may be simple mental dullness, or delirium of the excited type.

The face is frequently flushed and the facies may assume a type of excitement, dullness or stupor.

Tongue: As a rule the tongue is coated, furred and white; dryness of the tongue is rated as somewhat dry and very dry. The physicians in Poland consider the dryness as reliable criteria of the severity of the case.

Eyes: Conjunctival injection is noted early in the course of the disease and may be moderate, marked, or very extreme. The conjunctival injection, like the delirium, tends to increase with the eruptive stage.

Labial herpes has not been observed as a frequent occurrence.

Eruption: From the third to the fifth day of the disease the eruption appears, first as a subcuticular mottling of the neck and chest, appearing as a fine, irregular, red mottling, as if below the surface of the skin. The true rash follows and appears first, as a rule, on the trunk, at first as discrete, clearly defined, pink macules, round, oval or somewhat irregular, measuring from 2 to 6 mm. in diameter; the macules disappear on pressure, are rarely palpable and are distributed with more or less profusion on the chest, abdomen, back, neck, arms, legs and dorsa of hands and feet. The rose colored macules change to petechial which do not disappear on pressure.

In children especially the rash frequently presents a strong resemblance to measles. In mild cases the eruption may be slight, but has the same general distribution as in severe cases and is as a rule petechial in character. The profusion of the rash has been considered as a grave prognostic sign, however, cases with the most extensive rash, have terminated favorably.

Usually the skin is dry and sudaminal vesicles are not common. The rash persists throughout the course of the disease fading rapidly

following the crisis, and desquamation is common during convalescence.

Temperature: The temperature on the day of onset usually registers 100° F. to 101° . It rises steadily during the first five days of the disease, with marked morning remissions. By the end of the fifth day the maximum temperature of 105° to 107° is reached. The fever continues with slight morning remissions until generally about the thirteenth or fourteenth day of the disease, when the crisis occurs and this is marked by its suddenness, and rapid decline of the temperature to or below normal. There is as a rule a slight post critical rise in temperature during the evenings for the first two days following the crisis.

In mild cases the maximum temperature ranges between 100° and 101° in the afternoons, with the usual morning remissions and terminates by crisis or a very rapid lysis.

Circulatory System: The heart shows weakness, the first sound is feeble and a systolic murmur at the apex is frequently heard. The pulse increases in frequency and as the disease progresses toward the second week the pulse shows marked weakness. The pulse is not so frequently dicrotic as in typhoid. As the pulse becomes feebler the face assumes a dusky hue.

Second Week of Disease: In severe cases the prostration is extreme—the patient lies on his back, is dull, the face expressionless, cheeks flushed and conjunctivae injected; the pulse becomes more rapid, feeble and irregular. The tongue is brown, dry and cracked, and there are sordes on the teeth. Respiration is increased and breathing becomes laborious. Retention of urine is common, the bowels remain constipated; picking at the bed clothes is noticed. The patient passes into profound coma and in fatal cases the temperature rises to 107° F. or 108° F. and death follows from exhaustion.

Even in the most severe types of the disease when they terminate favorably, the crisis is followed in the majority of the cases by clearing of the patient's mentality, the first remark often being "what a relief from that dreadful headache."

TROPICAL TYPHUS

Fletcher describes under the term variant or tropical typhus an outbreak of typhus occurring at Kuala Lumpies, the capital of the Federated Malay States.

Kuala Lumpies is but 4° north of the equator, the mean temperature is about 84° F. and there is no appreciable seasonal variation.

The symptomatology of tropical typhus is described by Fletcher as a disease in which the onset is sudden, the patient rarely has any difficulty in naming the day he was taken ill. Headache is the early symptom and in all cases described as severe. Epistaxis is present in a few cases, lachrymation and photophobia constant—bronchitis so common as to be regarded as a symptom and not a complication. The temperature rises rapidly from the onset, the pulse quickens, the headache prevents sleep and in cases of moderate severity, at the end of the first week the patient passes into a typhoidal state, becomes tremulous, and muttering and delirium develop. In milder cases delirium does not occur, but the patient is mentally confused. The temperature reaches its height from the seventh to eighth day. The lungs are full of coarse crepitations and the respiratory rate reaches 40. The patients as a rule look desperately ill.

The rash appears on the fifth day. In some cases a prodromal rash of an urticarial nature appeared. The rash proper has a general distribution, being thicker on the chest and abdomen. The spleen is enlarged in the majority of cases.

The cases terminate by crisis or by rapid lysis from the 12th to the 14th day. The Weil-Felix agglutination reaction is present in most of the cases.

ENDEMIC TYPHUS

The majority of cases of typhus fever seen in the United States present symptoms so similar to those described by Brill^s in his original report on the disease which for some time was known as "Brill's Disease" that his original description is quoted in detail.

"The disease began abruptly, with a chill; the temperature rose far more quickly than in typhoid fever and within a few days it reached its maximum. The conjunctivae were injected, the face flushed and there was intense headache; sometimes there was rigidity of the neck as well. Bronchitis was nearly always present. The spleen was enlarged in 54 per cent of the cases. An eruption came out on the sixth day; it appeared first on the back and abdomen and then spread to the arms and thighs; in some cases the eruption was identical with that of typhoid fever, except that it did not come out

in crops; in others there was a dull red maculopapular eruption which did not disappear on pressure. The periphery of the spots was commonly indistinct and frequently several of them coalesced to form patches. In six per cent of the cases the eruption was petechial, suggesting a typhus eruption more than anything else. The symptoms remain in full development until the 12th day when the fever abruptly disappears, the rash fades, the headache leaves, the apathy and prostration vanish and the patient feels perfectly well. The most remarkable feature of this disease is that, with the fall of the fever, all the signs clear up and the patient, who may have looked very sick, becomes alert, interested in his surroundings, and says he is well; the headache is dispelled as if by magic; the eruption rapidly fades and convalescence is established. In one third of the cases the fever terminated by crisis and the temperature became normal in less than twenty-four hours. The disease appeared principally in the summer months. There was no evidence that it was directly communicable. The case mortality was very low, probably not more than 2 per cent."

Brill concluded that the disease he described was not typhus, but another disease apart, as distinct from typhus on the one hand as from typhoid on the other. He based his arguments on the facts, that the disease was not communicable, that it was not a grave and fatal malady, and moreover, epidemics of it did not arise although it was constantly present in the community.

LABORATORY FINDINGS

Blood: Aside from the agglutination reaction found in the disease, which is described in detail later on, the blood shows an early *leucocytosis* averaging 24,000 which persists throughout the disease. The polymorphonuclears reach 90 per cent and there is frequently an entire absence of eosinophiles.

Urine: This shows the usual febrile characteristics, albumen usually being present throughout the disease; nephritis seldom follows.

THE WEIL-FELIX AGGLUTINATION REACTION

Weil and Felix cultivated from the urine of a typhus fever patient an organism of the proteus group which was agglutinated by the patient's serum, also by sera from other typhus fever patients

—and they named the organism X 2. Later they isolated from the urine of a typhus fever patient a similar organism which agglutinated in higher dilutions with typhus sera than X 2—and they named this later organism *Proteus* X 19. Weil (1916) recommended the use of *Proteus* X 19 for the agglutination test and X 19 is the organism now used in the Weil-Felix agglutination reaction.

When the Weil-Felix reaction first came into use it was regarded as being specific for typhus fever. Kelly⁹ (1923) obtained a positive Weil-Felix reaction from the serum of a patient who had had an attack of Rocky Mountain (California type) spotted fever. Kerlee and Spencer¹⁰ (1929) have shown that *proteus* X 19 is agglutinated by sera of rabbits inoculated with spotted fever virus but the sera of guinea pigs inoculated with spotted fever virus did not agglutinate two strains of *B. proteus* X 19. The reaction was also obtained in patients suffering from Rocky Mountain spotted fever. The serum from the human cases showed an increase in titer from the seventh to fourteenth day.

This reaction is found in old world typhus, Mexican typhus, tropical typhus which occurs throughout the tropical world, and the endemic forms with which we have to deal in the United States.

The reaction may, therefore, at least be considered of value as a supplement to the clinical observations and should be employed as a part of the routine examinations in all cases where the symptom syndrome does not establish a definite clinical entity.

PATHOLOGY

Wolbach's⁴ description of the pathological findings in epidemic typhus is quoted in full—"The lesions of typhus fever are located in the blood vessels of the skin, central nervous system, skeletal muscles and to a lesser degree in the heart, kidneys and testis. Hence we may say that typhus is a disease of the smaller blood vessels and that the parasite of the disease localizes almost exclusively in the vascularendothelium. The reaction to the parasite is shown primarily by degenerative changes giving rise to thrombosis in the blood vessels, and by a proliferative reaction on the part of the endothelium and neuroglia which gives rise to the characteristic microscopic nodules of the disease in the skin and central nervous system.

"Death from typhus fever in man is frequently the direct result of extensive involvement of the brain with the proliferative lesions."

Mosser working with Mexican typhus has shown that a constant symptom occurred in male guinea pigs by which the type of the disease can be distinguished from strains of European typhus. The symptom is a swelling of the scrotum which is not unlike that observed in guinea pigs reacting to Rocky Mountain spotted fever.

The Mexican strains and the strains from the Southeastern United States can be differentiated from European typhus by two findings—a quantitative phenomenon consisting of involvement of the tunica vaginalis and a quantitative one consisting in the scarcity or absence of the nodular lesions in the brain.

The scrotal lesions observed in Mexican typhus and in endemic typhus of the Southeastern United States have never been observed in guinea pigs inoculated with typhus from New York, which appears to justify the statement that Brill's disease observed in New York belongs to the European variety.

COMPLICATIONS

Broncho-pneumonia is a frequent complication and gangrene is not uncommon. In epidemics gangrene of feet, hands or nose, and in children cancrum oris occur, but in the endemic type these severe complications are not seen. Paralysis is noted during the course of the disease, probably due to cerebral thrombosis. This tends to clear up shortly after the crisis.

Decourt reporting on disturbances of the nervous system that occurred during the course of typhus in the convalescent period, found beside the delirium and symptoms of cerebral or spinal lesions of the pyramidal tract, many disturbances of the type observed in epidemic encephalitis, such as myoclonia, hiccough, contracture of the extremities, nystagmus and diplopia. Such nervous disturbances as paresthesia, cramps and asthenia lasted many months. Grodzki¹¹ has found that many of the typhus fever patients in Russia during the 1919-1921 epidemic suffered from disturbances of the nervous system, which were of encephalitic type, which condition has persisted as a chronic encephalitis for a period of seven years.

MORTALITY

The mortality varies in the several types of the disease; in the many severe epidemics the rate has ranged from 12 to 20 per hundred thousand population and in the average type the mortality rate is 2 to 5. The attack rate among children is equal to that of adults, though the mortality rate among the young is very low. For the older ages the fatality rate increases and among the old the rate has reached 50 per hundred cases. The disease is more fatal among the well-to-do than among the poor and is slightly more fatal in males than in females.

DIAGNOSIS

Typhus may be distinguished from typhoid fever by the absence of prodromal symptoms, by the sudden onset, with headache, chills, vomiting and rapid rise of temperature; the eruption of typhus changing from macular to petechial in character, the eruption in typhoid frequently occurring in crops. The presence of leukocytosis in typhus averaging 20,000, the polymorphonuclear constituting 90 per cent, and the rapid decline of temperature by crisis in typhus and the absence of a Widal and a positive Weil-Felix agglutination reaction should differentiate typhoid from typhus fever.

The differential diagnosis between typhus and Rocky Mountain spotted fever on clinical grounds is most difficult if not impossible. In spotted fever there are more often prodromal symptoms, the eruption in spotted fever appears first on the ankles and wrists, spreading rapidly to the rest of the body, the eruption at first of a macular type changes to petechial from the sixth to the tenth day—the temperature in spotted fever terminates as a rule by rapid lysis from the 7 to 10 day and in typhus the return to normal temperature is generally by crisis, occurring from the 12 to 14 day of the disease. In unfavorable cases, both in typhus and spotted fever, the patients sink into a typhoidal state.

From typhus recurrens or relapsing fever of Europe, the diagnosis is established by the presence of spirochaetes in the blood during the course of the fever. In relapsing fever the temperature returns to normal about the seventh day to return again after an interval of seven days. The skin is yellowish in color, damp and hot; the liver and spleen both enlarged and tender.

In measles the early coryza, sneezing, Koplik spots and absence of severe constitutional symptoms, the frequency of measles in childhood, absence of severe headache should establish the diagnosis.

TREATMENT

From the onset the patient requires supportive treatment. Water should be given freely and the diet should consist of liquids and soft solids. Hydrotherapy in the form of cold sponges should be given whenever the temperature reaches 103°. An ice cap applied to the head seems to afford some relief from the mental symptoms. Enemas, every second day should be given to relieve constipation. For the mild delirium, veronal or chloral and for exhausting delirium hyoscine hypodermically should be given. Codein has been found useful for the tiresome cough and morphia is of service in delaying exhaustion, cough, restlessness and insomnia.

Convalescent Serum: Serum has been recommended and some beneficial results have been reported. However, its use has been too limited to warrant an opinion. Moreover, the serum could only be available in times of epidemics.

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MESENTERIC VASCULAR OCCLUSION*

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In going into the literature upon this subject, I came upon an article by Andrew Cowles, published in the *Journal of the Oklahoma State Medical Association* in February, 1926; that so aptly expresses my sentiments, that I cannot resist quoting him. He says: "A discussion of the rare and unusual in the wide field of surgery, or the reporting of a single case of any particular disease may be considered presumptuous, however, when we meet the so-called acute surgical abdomen, this condition is a factor to be considered in the diagnosis.

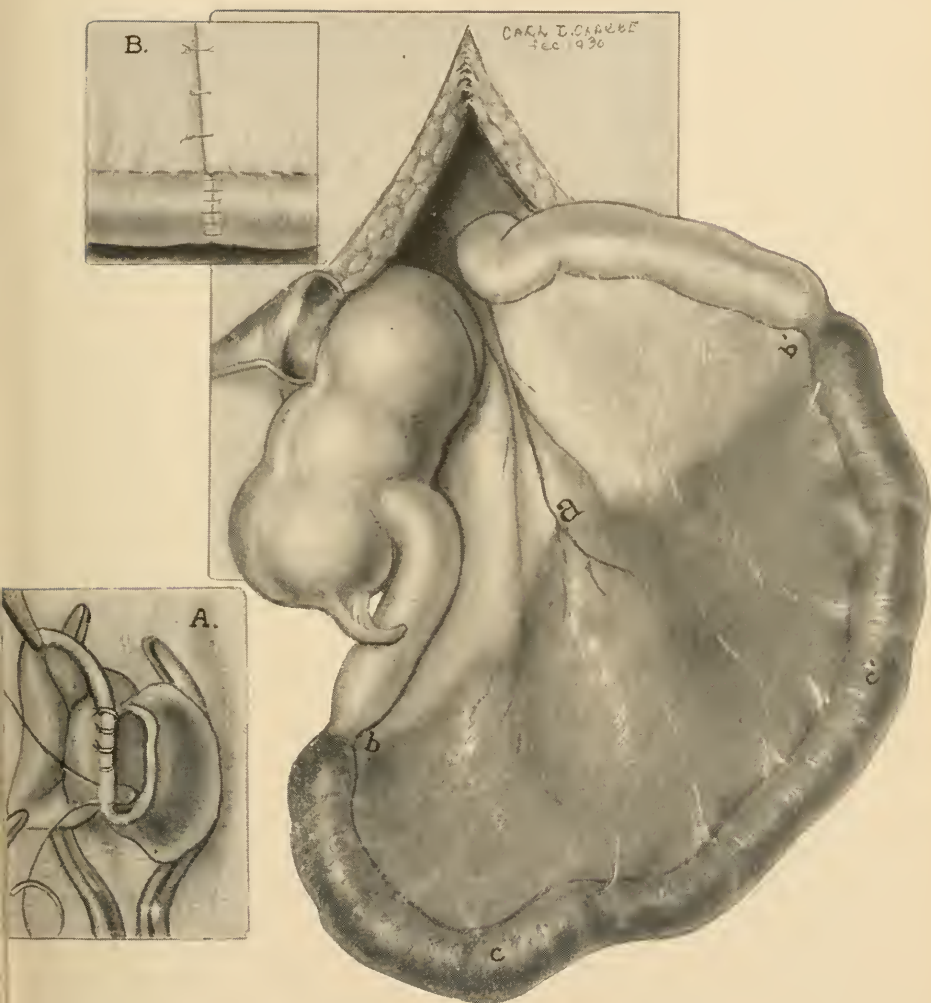
"The difficulty of accurate diagnosis, the danger of delayed operation, the fact that all cases are operative, make, I think, sufficient reason for reporting a case of such a fairly rare surgical disease, justifiable."

Upon this basis, quoted from his article, I ask your indulgence. According to Wilburn Smith, writing in the *Southwestern Medicine* in December, 1928, only about 500 cases of Mesenteric Thrombosis had been reported from the time Virchow published his article in 1847, to that date. Cowles found somewhat over 400 cases up to the time of his article. Apparently the first reported successful operative recovery was that reported by Eliot in 1895. The figures given by Smith, Cowles, etc., are confirmed somewhat later by Pelton, Brady and others. Doubtless there have been quite a few cases that were not reported. All, however, agree that the condition is quite rare and recovery much the exception, rather than the rule, the mortality being rather uniformly from 93 to 95%—only 35 recoveries having been reported up to December, 1928—this including all cases, whether operated upon or not.

Cowles and Brady prefer the term Mesenteric Vascular Occlusion, to that of Thrombosis, Embolism, etc.—and personally I incline to the same view as being more descriptive and accurate, for it is fre-

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SKETCH SHOWING GANGRENOUS AREA OF SMALL BOWEL

a—Sight of thrombus
b & b'—Contraction rings
c & c'—Gangrenous bowel

A—Detail of suture
B—Completed anastomosis.

quently impossible to differentiate the conditions—and the symptom complex is the same, irrespective of the exact cause of the infarct.

The following case is rather typical of those described, lacking only one of the elements required by Smith for a tentative diagnosis, i. e., "the palpable mass;" not that I would infer that we made the diagnosis, prior to opening the abdomen, but simply that looking back upon the case I realize now that had we been somewhat more familiar with the symptomatology, we might have guessed it. Before giving the case record, I wish to briefly mention a rather interesting phenomenon observed in the involved intestine which I consider of interest, in that it seems to verify the work of Welch and Moll on the pathology of the condition. Some years ago, in attempting to find out why the condition of occlusion of the mesenteric vessels was so uniformly fatal, even when small vessels are involved and regardless of collateral circulation, they found that any condition that resulted in disturbance of the blood supply to the bowel, was almost immediately greatly aggravated by the violent clonic and tetanic contraction of the smooth muscle layer, followed by blanching of the involved bowel, and later by hyperemia, edema and hemorrhagic infiltration of the walls. In this case, just proximal and distal to the sharply demarcated gangrenous gut, was an area about an inch in length, that was pale and tetanically contracted. In doing the resection, we went well outside of these areas.

The following is a brief resume of the case:

Sister M. A., age 43 years, a colored religeuse, with a previous history of mitral insufficiency and a hysterectomy for uterine fibroid and appendectomy, three years ago, was taken suddenly sick July 30th, 1929, about 3 p. m. with severe colicky abdominal pain, vomiting and diarrhea—she was given a purgative and the usual treatment for gastro-enteritis, before a doctor was called some hours later. Blood was observed in the stools. She was seen the following day by Dr. Voeglein who ordered a sedative, discontinued nourishment by mouth, etc.—and asked me to see the patient that evening, which I did about 7.30 p. m., July 31st, 1929. At that time, 28 hours after onset, patient was in marked collapse, skin cold and moist, temperature 97 degrees by mouth, pulse 130 of poor quality—the abdomen was distended and dull in flank and vomitus which was inspected was definitely fecal.

The patient was removed to St. Joseph's Hospital and operated upon at about 11.30 p. m.—the pre-operative diagnosis being intestinal obstruction. Leukocyte count showed 20,800 with 88% neutrophiles. Urine showed heavy trace of albumen—test for indican was not done. The abdomen was opened through a low right rectus incision and immediately a quantity of dark red,

foul smelling fluid escaped—and an area of gangrenous bowel came into view—the hand was introduced into the incision and about 90 cm. of gangrenous bowel was lifted through the incision—the above described contracted areas were plainly visible and incited comment—there was a large black, classical infarct in the mesentery, high up close to its origin, that was clearly marked out—it involved one of the larger branches of the superior mesenteric artery, the terminal portion being about 12 cm. from the cecum—as the mechanical factors were unusually favorable a resection and end to end anastomosis was done as quickly as possible. The peritoneum was wiped out, intestine returned and two ciagrette drains left in place. The stomach was lavaged and a duodenal tube passed through the nostril. Subcutaneous saline, which was started at the beginning of operation was continued.

The operation was completed at 12.20 a. m. and patient returned to room, greatly shocked, temperature 97 degrees—pulse 150. The duodenal tube was left in place for 72 hours and nothing but small quantities of cracked ice, allowed by mouth. The distress was great after removal of tube and it was reinserted with difficulty and allowed to remain until the seventh day. Infusions were given daily from 1500 to 3000 c.c. each 24 hours—the rectal tube was inserted daily and allowed to remain as long as tolerated. The incision was dressed daily and the last drain removed on seventh day—the lower end of wound healing by granulation, after some superficial infection. On the 8th day an enema of warm soapy water was given and proved effectual—this was repeated the following day—and on the tenth day castor oil, oz. i, was given effectually. The patient was on a liquid diet after the seventh day and soft diet after the tenth—she was allowed up on the fifteenth day—and convalesced uneventfully from that time—she remained in the hospital, because of the additional care obtainable and was discharged September 18th, 1929, in good condition—having gained eight pounds. At this time, she is allowed to be up and about doing light duty—and apparently is entirely cured.

I attribute whatever success we had to two factors: first, the unexpected ease with which we got complete exposure—thus enabling a quick resection; second, the very conservative post-operative treatment, especially the duodenal tube and daily infusion, made possible by the unusually co-operative spirit of the patient.

SICKLE CELL ANEMIA

REPORT OF CASE WITH UNUSUAL FINDINGS

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and

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The normal red blood corpuscle is of a very definite shape. Under normal conditions it maintains its biconcave shape with great regularity. Variations in shape and size are considered as pathological and are quite characteristic for various clinical entities. The most common variations from the normal are seen in pernicious anemia, secondary anemia and sickle cell anemia. It is this latter group only that we wish to discuss in this paper.

Probably the first case of this condition to be reported was the one described by Herrick¹ in 1910. This case was reported because of the unusual blood findings. Washburn² in 1911 reported a similar case. A third case was given by Cook and Myers³ in 1915. Emmel studied the blood of relatives of Cook and Myers' case and found the condition to be present in more than one member of the same family. This was the first suggestion that the condition might be familial.

In 1922 Mason⁴ reported a similar case and to the condition gave the name of sickle cell anemia, and this name has been retained by most subsequent observers.

Sydenstricker, Mulherin and Houseal⁵ in 1923 reported two cases with a study of the blood of these families and report of one autopsy. Incidentally this was the first autopsy in a recognized case of sickle cell anemia. In this same year Huck⁶ reported two cases along with experimental studies as to the cause of this phenomenon.

From this date to the present time many valuable contributions to this subject have been made especially by Hahn and Gillespie⁷, Lawrence⁸, Graham⁹, Josephs¹⁰, and Rich¹¹.

Dresbach¹² in 1904 and Bishop¹³ in 1914 each reported a case of "striking poikilocytosis" occurring in mulattoes. However each of

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these cases showed high hemoglobin, high erythrocyte counts, and no symptoms or physical findings. Consequently they would not fall into the clinical entity of sickle cell anemia.

INCIDENCE

Most authors agree that sickle cell anemia is familial and hereditary, occurring indiscriminately as regards sex. The condition is confined to the negro race. However Castana¹⁴, Archibald¹⁵, Lawrence⁸, and Cooley and Lee¹⁶ have reported cases occurring in other than negroes. But due to the preponderance of evidence against the fact that the condition occurs in other than the negro race these cases arouse suspicion as to whether or not they are true sickle anemia. If these cases are true sickle cell anemia the additional question, as to whether or not the patients showed any trace of negro blood, is raised.

The various investigators in this field suggest varying figures as to the prevalence of this condition. The majority find the incidence varying between 5 and 7 per cent. Sydenstricker, of the University of Georgia, who probably has carried on the most extensive investigation in this field believes the incidence to be about 0.6%. Our findings on a comparatively small group bear out this percentage.

Climate and geographical location probably has no significance.

Sydenstricker¹⁷ believes the condition to be present at birth. Blood from the umbilical cord and from the circulation of infants of mothers having sickle cell anemia has been shown to possess the specific changes characteristic of the condition.

ETIOLOGY

Theories as to the etiology of this peculiar type of anemia have been many, consequently a brief resume as to the ideas of the various workers will be given—

- 1—Sydenstricker and coworkers⁵, (1923) found cells in the bone marrow which they described as sickle cells. Consequently they thought this sufficient evidence to conclude that the sickle cells seen in the peripheral blood were not the result of changes occurring in the circulation or in the splenic sinuses, but that the change had occurred in the bone marrow as the result of some primary fault of erythropoiesis.

- 2—Huck⁶, (1923) believed the unusual shaping of the erythrocytes was due to some thing inherent within the cell and not to any substance in the serum. He thought perhaps the condition might be due to a surface tension phenomenon.
- 3—Graham⁹ in 1924 thought that the condition might consist in an underlying status determined primarily by deeply rooted racial characteristics and brought into clinical evidence in occasional persons through the immediate action of toxic, metabolic or infectious exciting agents.
- 4—Josephs¹⁰ finding that the abnormal erythrocytes of sickle cell anemia resume their normal shapes when sufficiently washed concluded the media responsible for the sickling was in the plasma.
- 5—Hahn and Gillespie⁷ as the result of their experimental work believe that the sickle cell formation in vivo is due to a state of anoxemia.

PATHOLOGY

The first autopsy report to appear in the literature was given by Sydenstricker, Mulherin and Houseal in 1923. In this case peculiar changes in the bone marrow were observed, the spleen showed repeated hemorrhage and was reduced in size. Since that time many autopsies have been performed showing more or less common findings. These findings are degenerative changes in heart and liver, generalized adenopathy, and a malformation of the sinuses about the Malpighian bodies of the spleen.

The degenerative changes in the heart and liver are probably referable to the severe degree of anemia.

Varying reports as to the size of the spleen are given. Wollstein and Kreidel¹⁸ believe the explanation of this is that the size of the spleen varies at different times. And that the spleen probably enlarges with each exacerbation or crisis of the anemia. But as the condition progresses the spleen grows smaller as the result of hemorrhage and tissue damage and eventually shows marked fibrosis, pigmentation and healed infarcts.

Rich¹¹, as a result of extensive study of autopsy material, including known sickle cell anemia material, concluded that a characteristic lesion was found in latent as well as active cases. The characteristic

anomaly was the decided malformation of the sinuses immediately about the Malpighian bodies leading to the formation of pools of blood surrounding these bodies. Frequent abnormal capillary development throughout the Malpighian body is seen.

Since in the active cases the anemia is of the hemolytic type hemosiderin is found in the tissues.

Hahn and Gillespie⁷ have shown that fresh blood is not absolutely necessary for the study of the sickling of the erythrocytes. Necropsy or biopsy material hardened in 10% formaldehyde may be utilized for diagnostic work. Under these conditions blood clots are removed from the suspected material, crushed and put into suspension in normal salt solution. Smear preparations may then be made from this suspension. The elapse of time after fixation seems to have no importance in the amount or character of sickle formation in the erythrocytes in these preparations.

Tissues fixed in Zenker's fluid will not yield to this study.

By the utilization of this method probably many cases of active and especially inactive cases will be picked up which otherwise would have gone undiagnosed or even falsely diagnosed.

BLOOD

In the study of the blood for the detection of sickle shaped erythrocytes a special technique is utilized, that is, the wet preparation. The ordinary cover slip and slide are thoroughly cleaned. Then a small drop of blood, obtained by puncturing the lobe of the ear or the finger, is collected in the center of the cover slip. The cover slip is then inverted on the slide and the outer margin of the slip is rimmed with vaseline to prevent drying of the blood. This preparation is examined immediately, at the end of one hour, and occasionally for the next 48 hours. While under observation the preparation is kept at room temperature. When this means of study is carried out many cases of symptomless sickle cell anemia as well as those cases with symptoms are picked up. And from this type of study it is seen that there are definitely two distinct groups: an active and an inactive.

The active group shows sickle cells in the circulating blood. These cells are demonstrable in stained smears and also in wet preparations on immediate examination. In addition a more or less definite symptom complex and an anemia are seen.

The inactive or latent group shows no sickle cells when stained smears are prepared from the circulating blood. However, when wet preparations are made from the circulating blood and are allowed to stand for at least twenty hours at room temperature sickle cells may be found. This group has little, if any, anemia and usually no symptoms.

It is believed by many that an inactive case may become active and also an active case may become inactive.

In an active case the wet preparation shows an anisocytosis and marked poikilocytosis to the extent that few, if any, normal erythrocytes are seen. This is well shown in Figures I-VI.

The stained smear reveals other abnormal findings, which are not definitely characteristic of sickle cell anemia, such as polychromatophilia, nucleated erythrocytes (normoblasts and megaloblasts), large mononuclear cells phagocytizing erythrocytes, and an increase of reticulated cells.

The total red blood cell count is low and there is tendency for the hemoglobin to remain at a definite level (35%-60%), varying with the individual case.

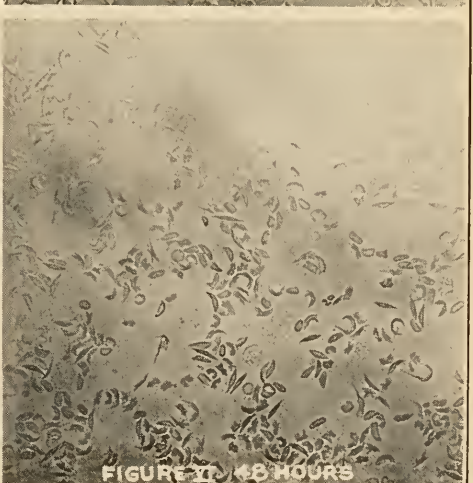
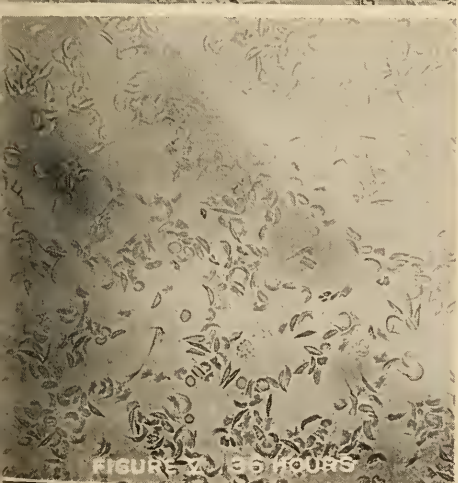
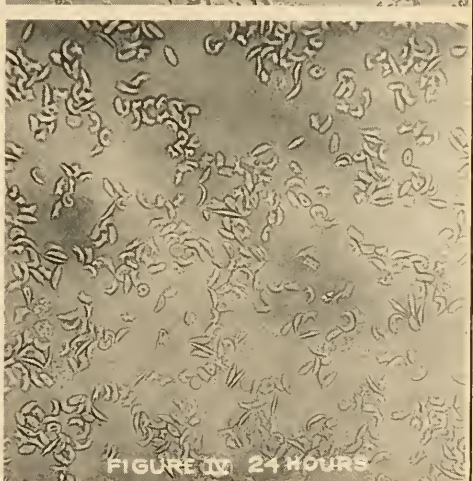
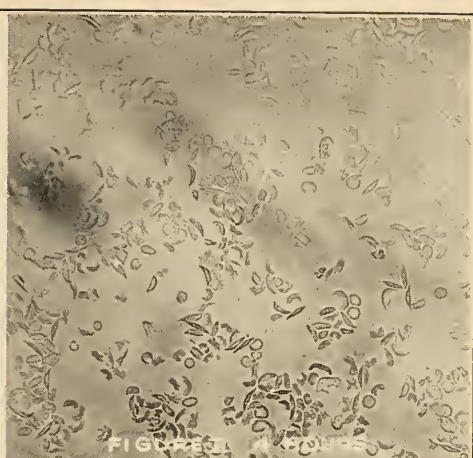
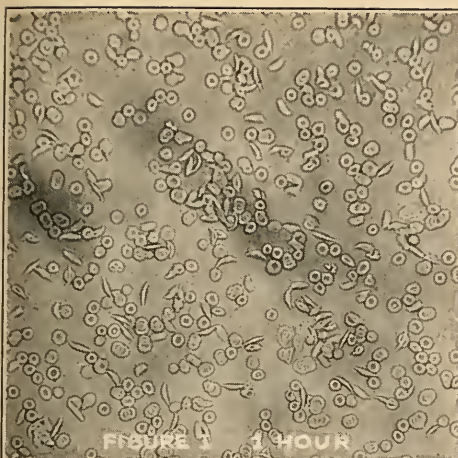
The total white blood cell count is increased (10,000-40,000), but there is nothing characteristic in the differential formula. No doubt this increase of white blood cells is a manifestation of bone marrow activity such as is seen in any severe anemia.

The greenish color of the sclera, presence of urobilin in the urine, increase of bilirubin in the blood serum, and phagocytosis of the erythrocytes suggests that the anemia is probably due more to increased destruction than to decreased formation of blood.

In the latent or inactive case a very much different picture is found. Here the anemia, if any, is very slight. The stained smear from the circulating blood reveals nothing abnormal, and only by the aid of the wet preparation will the sickling of the erythrocytes be noted.

SYMPTOMATOLOGY

There is no definite clear-cut clinical picture in a case of active sickle cell anemia. However, there are symptoms, such as weakness, muscular and joint pains, stiffness, sharp pain in the epigastrium especially after eating, night sweats, and slight fever, which to some degree suggest the condition.



Along with these are the symptoms probably due to the degree of the anemia—shortness of breath on exertion, malaise, lassitude, edema of feet and ankles, and dizziness.

Exacerbations occur so that the history is one of remissions and relapses.

In the active case the patient is poorly developed and nourished. There is a greenish discoloration of the sclerae, pale mucous membranes, and enlargement of the superficial lymph nodes. The heart is usually enlarged to the left with a systolic murmur over the precordium. The liver may be palpable. The spleen is usually not palpable. Leg ulcers are usually present or a history thereof is usually obtainable.

The inactive or latent case has no subjective symptoms. Objective symptoms, if any, are usually a greenish tinge to the sclerae and a slight enlargement of the superficial lymph nodes.

From the above findings it is seen that the condition quite closely simulates the picture of congenital hemolytic jaundice.

In congenital hemolytic jaundice leg ulcers and joint pains are rarely, if ever, present, the spleen is almost always enlarged, and there is a definite increase in the fragility of the red blood cells. These findings with the absence of sicklings of the red blood cells in congenital hemolytic jaundice are the main differential diagnostic points of the two conditions.

TREATMENT

As in other conditions of relatively unknown etiology, a great variety of forms of treatment have been proposed. However, it is our aim here to give briefly only the more recognized forms.

The inactive or latent form does not present itself for treatment and is only found by making routine wet blood preparations of all negro cases. However, when found in this manner steps may be taken to prevent, if possible, the case from becoming the active type. Generous amounts of wholesome food, plenty of rest, fresh air, and avoidance of infection if faithfully followed, all aim to this end.

The active case offers a more difficult problem. No doubt the treatment given the latent case is here too indicated and in addition more drastic steps have to be followed. The high degree of anemia is usually controlled by liver diet, iron and arsenic. In those few

cases when the degree of anemia is very severe blood transfusion is indicated. In more recent years splenectomy has been advised. Hahn and Gillespie⁷ in 1927 first reported a case so treated. Since that time Stewart¹⁹, Bell and coworkers²⁰, Cooley and Lee¹⁶, and Hahn²¹ have reported cases treated by splenectomy. A cure did not result in any of the cases. However, there was a definite curtailment of the excessive red blood cell destruction.

It is the general feeling that these cases with a grave degree of anemia and not responding to medical treatment if given a preliminary blood transfusion followed by a splenectomy improve.

The prognosis in the inactive or latent case is good, in the active and severe case unfavorable.

We feel justified in reporting the following case in some detail, not because the condition can be considered a rarity, but because this history illustrates how readily such a case might pass unperceived under the mask of symptoms suggestive of more familiar conditions.

CASE REPORT

J. W., colored male, age 24 years, single, birthplace, Virginia, entered upon the Medical Service of the Provident Hospital, October 28, 1929. Complaint at this time was severe paroxysmal pains in lower back of twelve hours' duration. Family History—Father died at the age of 36 years—cause unknown. Mother, 46 years of age, living and well. One brother, 22 years of age and one sister, 27 years of age, both living and well. Past History—essentially negative. Denies infection with gonorrhoea or lues. Present Illness—The pain in lower portion of back began suddenly about 11 P. M., October 27, 1929. Pain was very severe and radiated somewhat into right shoulder. Due to severe character of pain patient had to be restrained. There was no nausea or vomiting. No urinary symptoms were present. The attack continued to the morning of October 28, with little relief. The family physician was called and he advised hospitalization.

Prior to attack patient had felt perfectly well and had gone about his daily work. Similar attacks, although not as severe as present, had been experienced for the past 7 years. Patient had usually had one to three attacks a year. These attacks have lasted two to three days but during the attacks he has been able to be up and about. Otherwise general health has been good and patient has been able to do hard work.

Physical examination on entrance revealed a well developed and nourished colored male tossing restlessly about in bed as if in intense pain. The sclerae had a yellowish or greenish-yellow tinge. The pupils were equal, regular, somewhat constricted (due to morphia), but reacted to light. Tonsils were enlarged and cryptic. There was slight generalized glandular

enlargement. Lungs were clear. The heart showed slight enlargement with a systolic murmur best heard at base. Blood pressure 140/80. Abdominal muscles were held rigidly. There was marked distention. No definite areas of tenderness or masses could be made out. There was slight tenderness over lower portion of back. Rectal examination was negative. Reflexes were normal in response. Temperature 101.8°F. Pulse 108. An emergency blood count showed a moderate degree of an anemia and a definite leucocytosis (Table I). A catheterized specimen of urine was negative except for the microscopic examination which showed white and red blood cells (Table II).

With these findings a tentative impression of a stone in the kidney or ureter was considered. Consequently a roentgenogram of genito-urinary tract and gall bladder region was made. This was interpreted with some difficulty due to the gaseous distention of the intestines, however, no stone shadows could be made out.

Morphia was given hypodermically in small doses, a rectal tube was inserted and the distention was relieved. As a result the patient felt markedly improved.

At this time a more complete blood study was undertaken. The stained smear showed definite anisocytosis and poikilocytosis and a wet preparation was made.

Two days later the clinical picture was somewhat changed. The yellowish tinge to the sclerae had increased. The abdomen was symmetrical, no distention, and was soft. The spleen was not palpable but the liver was palpable about 3 cm. below right costal margin. The temperature and pulse were approaching normal limits.

From this time on gradual improvement was noted. There was only an occasional sharp pain in upper left quadrant which was usually associated with abdominal distention. Against all advice the patient left the hospital November 11, 1929.

After some effort the patient was persuaded to return to the hospital November 18, 1929 for further study. On readmission the patient was subjectively and objectively improved. During second admission course was uneventful except for one attack (November 21) that closely resembled the attack of the first admission. Treatment while in the hospital consisted of: rest in bed, iron (Blaud's pills), liver diet (started November 18), and sedatives whenever necessary for pain.

Patient was discharged December 5, 1929, improved and returned to work.

LABORATORY EXAMINATION

TABLE I

Blood.

DATE	HEMO- GLOBIN PER CENT (DAKE)	RED BLOOD CELLS	WHITE BLOOD CELLS					STAINED SMEAR
			TOTAL	DIFFERENTIAL (%)				
				PMN	SM	LM	Trans.	
10-27	55	3,100,000	23,600					
10-28			25,800					
10-29	53	2,800,000	26,400	78	11	10	1	Marked anisocytosis and poikilocytosis, achromia, many microcytes, numerous nucleated red corpuscles (normoblasts and megaloblasts).
11-4	48	2,580,000	17,450	80	10	10		Essentially as above (10-29). Nucleated red corpuscles, 13%.
11-20	50	3,100,000	14,200	69	20	8	3	Essentially as above (10-29). Nucleated red corpuscles, 25%.
11-25	50	3,380,000	13,600	64	23	10	3	Essentially as above (10-29). Nucleated red corpuscles, 9%.

Wet preparations—At varying intervals showed marked sickling of red corpuscles. (Figures I-VI.)

Fragility Test of Red Blood Cells—Initial hemolysis .45%

Complete hemolysis .30%

Blood Cultures—Negative.

Blood Wassermann—Negative.

Blood Chemistry—(mgn. per 100 cc. blood).

Urea	17	Phosphorus	2.2
Urea Nitrogen.....	7	Calcium	9.6
Uric Acid.....	3.5	Sugar	80
Creatinine	1.7	Amino acids.....	6.1
Chloride	330		

Van den Bergh reaction, 10-31: indirect positive; quantitatively 5.7 mgm. 11-21: indirect positive; quantitatively 3.4 mgm.

Liver Functional Test (Bromsulphthalein)—Normal elimination of dye.

Sputum—Negative.

Gastric Analysis—Fasting: Free hydrochloric acid 24°, total acidity, 42° 1 hr. after meal: Free hydrochloric acid 25°. Total

acidity 44°. Microscopic examination: Many starch granules and yeast cells. Lactic acid—Negative.

Stool Examination—On repeated examinations—mucus, negative for blood. Dark brown color.

TABLE II

Urine.

DATE	COLOR	REACTION	SP. GR.	ALB.	SUGAR	BILE	MICROSCOPIC
10-28	Amber	Acid	1.010	Neg.	Neg.	+	Few epithelial cells and WBC. Occ. Hyaline Cast and RBC.
10-31	Amber	Neut.	1.009	+	Neg.	+	Few epithelial cells. Occ. Hyaline cast and WBC. No RBC.
11-19	Straw	Acid	1.014	Neg.	Neg.	Neg.	Occ. Hyaline Cast and Epithelial cell.

Kidney Function Test: (Phenolsulphonephthalein elimination)—2 hrs., 55%.

DISCUSSION

This patient on admission presented symptoms suggestive of disease of the gall bladder or bile ducts or of the kidneys or urinary tracts. Further study of the case, however, did not reveal any definite evidence of such disease. The patient was found to suffer from sickle cell anaemia, and as it is known that abdominal pains are apt to occur in this condition it seems reasonable to believe that in our patient the pain was in some way connected with the anaemia. The mechanism, of course, remains obscure. In the examination of all negro patients presenting diagnostic difficulties the study of wet preparations of the blood should be routinely resorted to in order to uncover otherwise latent cases of sickle cell anaemia.

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HIS EXCELLENCY, EDWIN W. WARFIELD, GOVERNOR OF MARYLAND,
CHANCELLOR OF THE UNIVERSITY OF MARYLAND, 1907.

A FEW OBSERVATIONS UPON THE THIRTEENTH OPHTHALMOLOGICAL CONGRESS AT AMSTERDAM,

SEPTEMBER 5-13, 1929

By C. A. CLAPP, M.D.*

BALTIMORE, MD.

All preparations were made to hold this meeting in the fall of 1914 in St. Petersburg, but the Congress had to be abandoned due to beginning of the war. While there have been English-speaking and other Ophthalmic Congresses since 1914, this is the first actual international meeting since 1909.

The registration of the members was largely accomplished in the morning of September 5th, at the Colonial Institute, where the meetings were held. The Ceremonial opening took place that same afternoon in the Concertgebouw, or Concert Hall. The President of the Congress in his greeting of welcome addressed the delegates in six languages—Dutch, English, French, German, Italian and Spanish. The Queen Mother of the Netherlands declared the Congress open, after which the official delegates responded.

Owing to the very large number of papers, the Congress was divided into three sections each of which met both morning and afternoon except on those days when a symposium was being held. On Wednesday, September 11th, the Congress was moved bodily to Scheveningen, a seaside resort just outside of the Hague and seventy miles from Amsterdam.

The scientific program was very large. One of the first and most popular subjects was a symposium upon the cause and non-operative treatment of glaucoma. This discussion was interesting in bringing out many opinions, but few really new facts were elicited. Morax seemed to show that in cases of late infection following the trephine operation for glaucoma that usually an anerobic bacillus could be demonstrated.

Passow believes that glaucoma is caused by abnormal function of the thyroid gland. Many glaucomatous patients have increased

*Baltimore Medical College, class of 1902.

body weight and have a tendency to retain fluids. Waardenburg again called the attention of the profession to the frequent occurrence of nevii of the face with glaucoma. It occurred in four out of five of his cases.

Considerable time was also devoted to the question of the geographical distribution and spreading of trachoma. Weiss working in Tunis seemed to confirm Noguchi's findings and isolated the bacillus granulosa in many cases.

Roche feels that in trachoma an intermediary host is necessary for the transmission of the disease and that the infectious period is comparatively short. This would simplify the combating of its spread if found to be correct.

Mackay gave a very interesting report in reference to Ophthalmia Neonatorum in the Edinburgh District and stated that there had not been a single case of blindness resulting from the disease in the past five years.

Ford of London seemed to think that sinus or antrum infection may be a cause of ocular complications when Xray and other examinations were negative, but where cultures of the irrigated fluid were positive.

As to the question of tuberculosis of the eye, Mitarbeit and Meller have been able to demonstrate the tubercle bacillus in the blood by a cultivation method and eight times by animal inoculation in seventy cases of uveitis of supposed tuberculous origin.

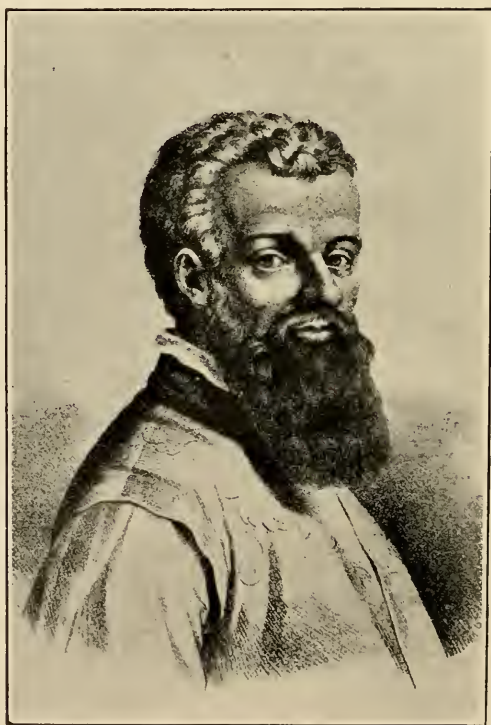
In the treatment of tuberculous lesions, Werdenberg seemed to get the best results with subconjunctival injections of salt solution while treatment with tuberculin and X-rays were also beneficial.

As to the treatment of epithelioma about the eyes, Villard in speaking of the use of radium versus surgical removal advised the surgical procedure in all cases except the non-operable epitheliomata.

Cushing, Gordon Holmes and others reported upon Suprasellar Tumors. Holmes pointed out that irregular bi-temporal narrowing of the fields with early development of central or paracentral scotomata followed by optic atrophy are the most usual eye symptoms. Cushing drew attention to the fact that the ocular symptoms frequently simulated toxic amblyopia and the oculist should be on his guard against confusing them. The suprasellar meningiomas are the most favorable for surgical interference.

While it was both instructive and stimulating to hear the various papers and their discussions, probably as much value and certainly as much stimulation was to be had in the meeting of famous men of Ophthalmology. To mention a few such as Kalt, Morax, Magitot, Baillart, LaGrange of France, Treacher Collins, Sir John Parsons, Sir William Lister, Mr. Leslie Paton, Mr. Foster Moore, Mackay, Sinclair of England and Scotland, Elschmig, Fuchs, Hamburger, Hertel, Löwenstein, Axenfeld, Szily A. V. of Germany and Austria, and other leaders from Italy, Spain, Japan and our own country.

Following the Congress most of the Americans sailed very shortly for America, although a few remained for study.



VESALIUS

ANNOUNCEMENT

University of Maryland, Division of Medical Extension

A Combined Review Course for Physicians

June 2nd—June 21st, 1930

Throughout the first three weeks of June 1930, the Division of Medical Extension of the University of Maryland will offer its seventh annual review course for physicians. This is a single, intensive, general course, which will last only three weeks. It is designed primarily to give the physician in general practice the opportunity of studying those methods of diagnosis and of treatment which are in current use in the University Clinics. By careful use of the short period of time available a wide range of subjects is briefly presented. The greater part of the course is devoted to general medicine, but surgery and the various specialties are also included.

Information:

Questions concerning the course may be addressed to the Dean of the Medical School, University of Maryland, Baltimore.

Requirements for Admission:

The applicant must be a registered physician in good standing. Preference will be given to physicians registered in Maryland.

Enrollment:

The course this year will be limited to twenty men. It is suggested that applications be made promptly as the course will be filled up in the order that applications are received. Address: Dean of the Medical School, University of Maryland, Baltimore.

Fees and Tuition:

A matriculation fee of \$25.00 will be charged to all registrants from Maryland. For those coming from other states a charge of \$50.00 will be made.

Registration and Matriculation:

Monday, June 2, 1930, 8.30 A. M., northeast corner Lombard and Greene Streets, Baltimore.

Daily Schedule:

8.00-10.00—Lectures.

10.00-11.30—Ward Rounds.

11.30-12.30—Clinic.

12.30- 1.30—Lunch.

1.30- 2.30—Dispensary Clinic.

3.00- 4.30—Laboratory and Therapeutic Procedures, X-Ray and Electrocardiography.

Lectures:

The morning lectures will deal with modern advances in diagnosis and treatment. The subjects will be chiefly from the field of general medicine and surgery with a few lectures devoted to the specialties.

Ward Rounds:

The class will be divided into groups for ward rounds and will visit the ward patients on the medical, surgical, and special services, in the University, Mercy and City Hospitals.

Clinics:

There will be a daily clinic in the Amphitheatre of the University Hospital. These clinics will be given by different departments.

Dispensary Clinics:

The class will be assigned in groups in rotation to the Dispensary Clinics for pediatrics, genito-urinary diseases, syphilis, and gastrointestinal diseases.

Laboratory, Therapeutic Procedures, Roentgen Diagnosis, Electrocardiography.

In these afternoon periods instruction will be given in the laboratory methods of diagnosis. Modern functional tests such as those employed in diseases of the kidneys and of the liver will be demonstrated. The technique of, and the indications for the use of such procedures as transfusions, venesection, infusion, and spinal puncture will be taken up, and demonstrated when possible. There will be a number of periods devoted to X-Ray diagnosis. Electrocardiography and the interpretation of electrocardiograms will be briefly presented.

THE ENDOWMENT FUNDS

The Board of Trustees of the Endowment Funds reports for the fiscal year ending December 31, 1929, as follows:

	Invested	Cash	Total
Faculty of Physic Fund.....	\$52,012.08	\$277.23	\$52,289.31
General Endowment Fund.....	18,378.70	171.41	18,550.11
Katherine Gibson Fund.....	2,536.99	643.52	3,200.51
Charles M. Hitchcock Fund.....	5,000.00	268.00	5,268.00
Leo Karlinsky Fund.....	3,000.00	318.67	3,318.67
Leon Frank Fund.....	2,466.56	391.22	2,857.78
Randolph Winslow Fund.....	2,500.00	84.36	2,584.36
David Streett Fund.....	350.00	662.67	1,012.67
Burt J. Asper Fund.....	.....	241.89	241.89
Daughters of American Rev. Fund.	945.00	598.71	1,543.71
Charles Frick Research Fund.....	500.00	794.47	1,294.47
J. C. Hemmeter Fund.....	8,911.12	714.18	9,625.30
Law Fund .....	.....	235.66	235.66
Pharmacy Fund .....	.....	64.07	64.07
Dental Fund .....	.....	33.72	33.72
L. S. Ashman Fund.....	.....	183.82	183.82
J. Friedenwald Fund.....	11,003.29	541.26	11,544.55
I. and C. Cohen Fund.....	4,920.14	362.36	5,282.50
G. H. H. Emory Fund.....	.....	587.26	587.26
J. M. H. Rowland Fund.....	5,568.95	385.58	5,954.53
H. and L. Zimmerman Fund.....	1,003.47	29.35	1,032.82
A. Bradley Gaither Fund.....	.....	407.52	407.52
	<hr/>	<hr/>	<hr/>
	\$119,116.30	\$7,996.93	\$127,113.23
Total of all funds, December 31, 1929.....			\$127,113.23
Total of all funds, December 31, 1928.....			121,845.59
			<hr/>
Increase for 1929.....			\$5,267.64

No university can carry on today without resources other than the income derived from its tuition fees. An adequate endowment is therefore necessary to meet this deficit, else sooner or later the school must close its doors. Friends of the University of Maryland will therefore note with satisfaction the steady growth of its endowment funds. Unfortunately, as yet, these are too small to be of much aid. However, in the near future, several substantial residuary bequests should become available. These will be a real help in re-

lieving some of its more pressing needs, but at that will only scratch the surface, for every department is sorely cramped for lack of funds. Therefore any assistance, be it large or small, will be greatly appreciated by the University authorities. This money is placed in the permanent funds and is administered by the Board of Trustees of the Endowment Funds, a body incorporated by the State of Maryland and independent of the Faculties. This proviso assures the donor that the corpus of his gift will be preserved and that his wishes will be strictly observed, for not even the interest can be expended without the consent of the Board of Trustees.

Contributions, bequests and donations, if intended for the School of Medicine, may be given to the general medical fund, or to a special purpose, as research, fellowship, library, hospital, publication, scholarship, or to any other object the devisor desires.

To rise to greater heights of usefulness, the University of Maryland must have more fluid assets at its command than it possesses at present. Surely its one hundred and twenty-three years of continuous service should give it peculiar claims upon the generosity of the philanthropically inclined. As a friend of this venerable institution, may we not enroll your name among its benefactors either by a gift now, or, at least, by a remembrance in your will.



GRANVILLE SHARP PATTISON, Professor of Surgery, 1820-1826.

BULLETIN

OF THE

SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

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DR. WILLIAM ROYAL STOKES

1870 - 1930

Dr. Stokes died at the Mercy Hospital, Baltimore, on February 10th of Psittacosis which was contracted while performing autopsies on parrots which had died of this disease.

He was born in Baltimore and was graduated from this school in the class of 1891 and spent the ensuing two years doing post-graduate work at Johns Hopkins in Histology and Pathology. In 1893 he went to Boston and worked with Dr. W. T. Councilman, Professor of Pathology, at Harvard and was Assistant Resident Pathologist at the Boston City Hospital, working with the late J. Homer Wright, also an alumnus of the University of Maryland.

Returning to Baltimore in 1896 he began what was to be his life work by organizing the Department of Bacteriology in the Health Department of this city, a position which he filled with zealous efficiency until the day of his fatal illness. He also was Director of the Department of Bacteriology of the State Board of Health from 1898 until 1920. During 1899 and 1900 he was Associate Professor of Pathology and Bacteriology in the University of Maryland, leaving here in the latter year to take the Chair of Pathology and Bacteriology in the College of Physicians and Surgeons, which position he held until the merger of the two schools. After the merger he continued his teaching and was Professor of Bacteriology.

Dr. Stokes was best known as a Bacteriologist, especially in that part of this science which dwelt with Public Health. His scientific contributions were numerous and valuable and many of them were pioneer in character. He was the recipient of the degree of Sc. D. from Washington College, Md., in 1910. He was a member of the American Public Health Association, the American Society of Bacteriologists and the American Medical Association. He is survived by his widow, Mrs. Anna Dunderdale Stokes, a daughter, the wife of Lt. W. S. Keller, U. S. Navy, and a son William H. Stokes.

After a close association with Dr. Stokes for nearly a third of a century, I feel free to say that I have never known a man who thought and spoke more kindly of his fellow man than he did. Stokes was fond of the nicer things of life and devoted all his spare time to reading, music and the arts. He was a poet of no mean ability and a teacher combining both efficiency and charm. He was modest in the extreme and it can be said of him that his life work was devoted to science and the public weal without expecting or receiving a recompense at all commensurate with the good he accomplished or the sacrifices he made.

DR. CHARLES O'DONOVAN

Dr. Charles O'Donovan, born in 1861, died, January 23, 1930. He left a wife who was Miss Rosa Shriver, three daughters and a son, Dr. Charles O'Donovan 3rd.

His great grandfather, Dr. Michael O'Donovan, was graduated from Trinity College, Dublin, in the year 1795. He moved to Charleston, S. C., where he shortly after succumbed to Yellow Fever. Dr. Michael's son—John H. was born in Ireland in 1802. He was brought to Baltimore, but advised to wait here because of the epidemic then in Charleston during which his father died. Dr. John H. O'Donovan was graduated from the University of Maryland in 1824 and died in 1869. He practiced his profession in Baltimore during his medical career. He was a close personal friend of Professor Nathan R. Smith, whose address before the Medical and Chirurgical Faculty on the attainments and virtues of his colleague was published in 1870.

Dr. John H. left a son Charles, the father of the late Dr. O'Donovan, who also was graduated from the University of Maryland in



DR. CHARLES O'DONOVAN

1853. The late Dr. Charles O'Donovan received his academic training at the Georgetown University and his degree in medicine at the University of Maryland in 1881. It is thus seen that Dr. O'Donovan was descended from a long and distinguished line of forebears trained in the art and practice of medicine. To this hereditary influence it is natural to attribute many of the qualities of mind and heart which were so strongly evident in Dr. O'Donovan's career. In 1907 he was elected president of the Medical and Chirurgical Faculty of Maryland. He was selected for many years as a delegate from the Faculty to the meetings of the American Medical Association. From 1900 to shortly before his death, he was Chairman of the Medical Board of St. Joseph's Hospital and Chief of the Medical Staff in that institution. His interests there were time consuming and active. With Dr. Louis McL. Tiffany, Dr. Robert W. Johnson, Dr. I. R. Trimble, Dr. F. E. Chatard, Dr. Frank Martin, Dr. A. C. Harrison and other able and distinguished men, he set a standard for dignified and efficient medical service which will serve as a monument to his energies and worth.

During the last two years of Dr. O'Donovan's life he suffered as the result of myocarditis. The course of his final illness was particularly distressing because of frequent attacks of nocturnal dyspnoea, which were severe and always associated with a feeling of impending dissolution. His prayer was that he might accept his lot with courage and die a manly death—a prayer that, probably, is in every man's heart. To him was granted in full measure this reward as part payment for faith, a life filled with charity and love for his fellow man.

It was but natural that a man of his mental and physical activity should have many interests outside his profession. He was an ardent member of the Roman Catholic Faith, a friend and admirer and physician to the late Cardinal Gibbons. He was for many years a trustee of the Cathedral Parish. Time, money and service of various sorts were freely given to the charities, societies and numerous social and other organizations of his Church. He was frequently a delegate to National Conventions of Catholic Charities. His interests were cosmopolitan. His mind was thoroughly saturated with ideas of personal freedom which quality is said to be characteristic of so many citizens of his native state. His personal integrity and cleanliness of mind were unusual. He had established for himself a stern

code of personal morals. This life he lived but accorded to every man to live and to conduct his own intimate affairs as he saw fit. I never but once heard him—stern and as uncompromising as he was with his students—rebuke a man for moral reasons. This was on the occasion of a doctor's smoker when one of the guests, looking cautiously about said: "I would like to repeat a story and—as there are no ladies present"— "Quite true," interrupted Dr. O'Donovan, "but please remember that there are gentlemen here." He was militantly opposed to meddling with the private affairs of people. We thus find him one of the organizers of the association against the prohibition amendment. He protested, as a delegate to the American Medical Association, against the restrictions placed upon the physician by the Volstead Act. Again and again he appeared before Committees in Washington against the proposed Federated Education Bill.

The happiest moments of his professional life were spent in the Children's Wards. Much of his technical training and education was devoted to the diseases of childhood, especially among the suffering poor. For his efforts and time and painstaking care among them, he will reap his greatest reward for—"I say to you, as long as you did it to one of these, my least brethen, you did it to me."



ANCIENT COIN BEARING THE HEAD OF HIPPOCRATES

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OUR FUTURE

In a previous issue of the Bulletin there was a statement that what our school most needed is loyalty, on the part of our alumni on the streets, in their offices, libraries and daily contacts. Nothing proves the truthfulness of this statement more forcefully than the recent successful campaign conducted by the University of Pennsylvania. They asked that every alumnus of that institution emphasize the needs and purposes of their Alma Mater in their professional and social contacts. In this way their campaign went over "with flying colors." We wish our alumni to be equally as loyal, and we feel that their loyalty is more effective if manifested through the Alumni Association in helping to carry out programmes for the future of our institution. Through the Association we can speak our opinions relative to the present or future activities of our school. Never have the leaders of the Alumni Association been more impartial toward any special group and more desirous of accomplishing worthy ends

than at present. To do this requires the active support of all alumni members. With united effort success is assured and without it ultimate victory will be a hard and tedious task.

In this life nothing is more disappointing than getting one's own way. Individualism throughout our alumni, has already found and will find its victorious realization at once unsatisfying and uncomfortable. More than ever individualistic gain is fated to find victory bitter. It is a religion whose field of proselyting is more strictly limited and when it has conquered its own narrow world it is debarred if it has no larger aims.

The stages of human development press upon one another's heels and here and there trample down each other. Loyalty to selfish groups is hindered by loyalty to self. Loyalty to self obstructs loyalty to the group, and we believe that loyalty to the group, for the sake of the group, is a danger to the Alma Mater. Nothing is gained by cutting out intermediate stages. Each must find his place in the procession. Each will have his part to play in the task and from every alumni will some day be required, not the merging or discording of various loyalties, but their simultaneous reconciliations in a complete and greater synthesis.

Then without misgivings we can watch and aid the assuagement of our institutions tragedies and without envy survey its sure and sound approach to success, being conscious that every stride toward efficient organization and cohesion, which is beneficial to the general welfare, will make us a partner to its good fortune and that any sinister tendencies will be restrained or corrected by our united efforts.

THE PORTER BILL

We wish to call the attention of our readers to the editorial in the Journal of the American Medical Association, February 8, Vol. 94, relative to the Porter Bill now pending in Congress. We do not wish to go on record as being in sympathy with "dope peddling," so called, but do feel that the bill in its present form has objectional characteristics that should come to the attention of our readers. Every physician should study the bill and advise his or her congressman and senator how they feel about it.



ELMER BURKITT FREEMAN, M. D.

Graduate of B.M.C., 1900. Vice-President of the Medical Alumni Association. Member of American Medical Association; American Gastro-Enterological Association; American College of Physicians; Medical and Surgical Faculty of Maryland; honorary member, State Medical Society, Minnesota; Baltimore City Medical Society; American Radiological Association; Southern Medical Association; Secretary, Section of Gastro-Enterology, Southern Medical Association. Engaged in practice of internal medicine in Baltimore, Md.



AUSTIN H. WOOD, M. D.

Graduate of the University of Maryland—1914. Member of the Board of Directors of the Alumni Association, member of the Baltimore City Medical Society, American Urological Association, American College of Surgeons. Engaged in the practice of urology in Baltimore, Md.



WILLIAM WAYNE BABCOCK, M.D.

Graduate of the College of Physicians and Surgeons—1893.
Vice-President of Medical Alumni Association. Professor
of Surgery and of Clinical Surgery at Temple University,
Philadelphia, Pa., Surgeon to the Samaritan Hospital, American
Hospital for the Diseases of the Stomach.

SPRING ACTIVITIES

At a recent meeting of the Board of Directors plans for Spring Activities were made which will consist of a one day celebration on June 5, 1930. In the morning there will be registration of visiting alumni. A Buffet luncheon will be served at the alumni house. In the afternoon clinics will be given by prominent alumni; subsequent to which the annual meeting will be held. Tickets for these activities including the annual banquet that will be held at the Lord Baltimore Hotel can be secured from the Alumni Executive Secretary, 519 W. Lombard Street for five dollars per ticket. Those intending to hold class reunions should communicate with the Alumni office at an early date. The classes of 1910 and 1920 have already appointed committees for promotion of reunions..

THANKS

On behalf of the Executive Secretary and the alumni personnel we wish to thank those alumni who have been so kind as to send us correct addresses for the names of those of whom we have lost contact. The response has been encouraging and we assure you that additional information will be likewise appreciated.

DR. HATFIELD

We are glad to announce that Dr. S. Hatfield, graduate of University of Maryland, class of 1922, who contracted psittacosis while investigating the etiology of the disease in the Baltimore City Health Department, is now convalescing.

THE STUDENT COUNCIL

The Student Council at a meeting held February the twenty-sixth adopted the following resolutions relative to the death of Dr. Stokes and requested that they be inserted in the alumni column of this bulletin:

"Whereas the recent death of Dr. William Royal Stokes has removed from the faculty an honored and esteemed teacher in whom all Maryland took just pride,,



EMIL NOVAK, M. D.

Graduate of Baltimore Medical College—1904. Member of the Board of Editors of Bulletin, American Gynecological Society, Southern Surgical Association; American College of Surgeons; Association for study of Internal Secretions; Association of American Medical Authors. Formerly Vice-Chairman section on Gynecology and Obstetrics; Secretary Baltimore City Medical Society; member Board of Supervisors of City Charities of Baltimore. Engaged in the practice of gynecology in Baltimore, Md.

"And whereas the student body is deprived of the inspiration of a teacher whose contributions to the Medical School and the Community were unique and unsparing of effort:

"And whereas the spirit of his life work was exemplified by his death in the line of duty for the advancement of science and for the relief of human suffering;

"Therefore, be it resolved that the Student Council of the Medical School, in behalf of the Student body, hereby expresses to his family and associates its profound sense of loss in his death and of gratitude for his life."

CLASS REUNIONS

You owe yourself a visit to your Alma Mater. Look over this list of class reunion groups. Committees are being appointed to represent graduates of P. and S., B. M. C. and U. of Md. classes for the following five-year groups:

1900-1905-1910-1915-1920-1925.

If you can help to promote these reunion affairs, write in at once. We need your help and we will gladly co-operate with you in making these reunions happy celebrations. The dates are June 5-6-7, 1930. See page 227 for list of chairmen.

BOOTLEG LIQUOR PARALYSIS

We have just received a clipping from the San Angelo Morning Times, San Angelo, Texas, relative to the possible discovery of the etiology of paralysis from the use of "bootleg liquor." Dr. Robert W. Barton, graduate of P & S, 1884, is of the opinion that it is caused from a plant used in its preparation commonly known as "fish berry."

IN REMEMBRANCE

(In Memory of Dr. WM. ROYAL STOKES)
whose poem "Remember Me" inspired this answer.

When oft as in that pensive mood,
We come to talk of people good;
Men who have moulded our careers
And left their stamp thru all the years.

Those who in the dim years past,
Have with their teaching and faith steadfast,
Instilled into a banal life
Some enriching thoughts, carefree from strife.

When some day in a far off clime
Once more we gather for a time,
And think of homeward bounds and ties;
Your memory will gleam like azure skies.

The quiet legacy you leave,
Is far greater than words bequeath;
And like your soft and tender rhymes
Will linger like some haunting chimes.

The world lives on, birds welcome day,
As you once with a merry roundelay;
Your students to their classes hurry,
For school continues with all its flurry.

Yet as we climb the well-worn stair
And this time do not find you there,
It is then we realize full well
What mere words alone can't tell.

O! noble soul! we fain would mourn
With the troubadours that awake the dawn;
Their liquid melodies that rent the sky,
Are hushed now in kingdoms high.

But we shall your remembrance keep,
And for you smile instead of weep;
Yet smiles are only clowns that cheat
The saddened heart of its burden deep.

O! to wander thru the golden past,
All shackles (you say) free at last,
And once again to dream with you—
The dream that n'er will come true.

—S. DANIEL BLUM.



LOOPER EAR, NOSE AND THROAT CLINIC,
UNIVERSITY HOSPITAL.

EAR, NOSE AND THROAT CLINIC OPENED AT UNIVERSITY HOSPITAL

One of the most important additions to the University Hospital in recent years has been the establishment of a clinic by Dr. Edward A. Looper, called the Looper Memorial Bronchoscopic Clinic for treatment of the diseases of the ear, nose and throat.



OPERATING ROOM

The old sun parlor on the fourth floor has been transformed into a beautiful clinic, consisting of one of the best equipped operating rooms for bronchoscopy in the South; a modern operating room, with the latest instruments, including endothermy equipment for nose and throat work; sterilization, treatment and consultation rooms which makes it a very complete unit.

Such a clinic has been badly needed at the University Hospital for



TREATMENT ROOM

a long time and speaks well for the efforts that are constantly being made toward progress at this Institution.

Bronchoscopy and esophagoscopy is now receiving considerable attention and the University is fortunate in being able to offer the latest facilities in this particular field.

The clinic is due to the generosity of Dr. Edward A Looper,



BRONCHOSCOPIC ROOM

who established it as a memorial to his little daughter who lost her life a year ago when a piece of celery lodged in her bronchus.

The old sun parlor was given by the University Hospital authorities. The reconstruction was aided by the Woman's Auxillary Board. Dr. A. J. Lomas, the Superintendent, who has largely been responsible for the many improvements at the University Hospital during the past few years, supervised the construction. The Clinic is now one of the show places of the Hospital. The rooms are all well lighted and the walls have been painted in attractive colors so that the whole unit presents a pleasing appearance.

PERSONALS

DR. SAMUEL SELDNER, 4900 Belair Road, celebrated his seventy-ninth birthday on Sunday, February second, of this year. Many prominent physicians called to extend their good wishes. Dr. Seldner is a graduate of the University of Maryland of the class of 1872 and is still actively engaged in the practice of medicine. He studied in Germany and Austria when an American Medical Student was a "rara avis" in those countries.

DR. EVA F. DODGE, class of 1925, is at Southern Pines, N. C., convalescing from an attack of Cerebro-spinal Meningitis which she contracted while in China, where she was engaged in the practice of her profession. We are glad to announce that she has recovered without any permanent stigmata.

Announcement has reached this office of the marriage of Dr. J. Henry Orff, 229 E. Lancaster Avenue, Shillington, Pa., to Miss Mary S. Clarke, daughter of Arthur B. Clarke and the late Rose D. Clarke, of the same city, on March 31st, in the "Little Church Around the Corner," New York City, at 2 P. M. The bride is prominent among the younger social set of Reading, Pa., and the groom is a well-known practicing physician of his community. He is a graduate of the Baltimore Medical College, class of 1904, and is a member of various medical societies in the state of Pennsylvania.

DR. JOHN D. STURGEON, SR., graduate of P. & S. 1880, and a member of the Medical Alumni Association, was honored by the people of Uniontown, Pa., on March 5, 1930. He has practiced in Fayette County for the past fifty years. The morning Herald recently said "that Dr. Sturgeon won his way into the hearts of thousands by his always gracious and kindly manner and his almost uncanny ability as a physician-surgeon."

We are grateful for this news of Dr. Sturgeon. More of our friends should send in such items regarding our active members.

DEATHS

DR. CLARENCE HAMILTON, Louisville, Ohio; P. & S.; class of 1886; aged 64; died, November 13, 1929.

DR. ROBERT A. HAYNES, Clarksburg, W. Va.; P. & S., class of 1896; aged 62; was killed, December 5, 1929, in an automobile accident.

DR. GEORGE M. SKINNER, Springwater, N. Y.; P. & S., class of 1886; aged 76; died, December 30, 1929, of carcinoma.

DR. MAXWELL E. SILVER, Detroit, Mich.; P. & S., class of 1897; aged 54; died, December 25, 1929, of cerebral hemorrhage and myocarditis.

DR. FRANK SIMON, Oakland, Neb.; P. & S., class of 1884; aged 67; died, November 24, 1929, of cardiac disease and pneumonia.

DR. J. L. SHOREY, Woodburn, Ore.; P. & S., class of 1891; aged 64; died, December 14, 1929, of paralysis.

DR. WALTER W. DAWSON, Grifton, N. C.; class of 1897; aged 55; died, January 2, 1930.

DR. MICHAEL JOSEPH SULLIVAN, Englewood, N. J.; B. M. C., class of 1902; aged 56; served during the World War; died, November 3, 1929.

DR. BENJAMIN RUSH BEELER, Mineral Wells, Texas; P. & S., class of 1895; aged 64; died, November 19, 1929, of cardiac disease.

DR. SIMON P. CONDUFF, Draper, Va.; B. M. C., class of 1898; aged 56; died November 24, 1929, of arterial hypertension, cerebral hemorrhage and uremia.

DR. FREDERICK GIBBONS MITCHELL, Sparks, Md.; class of 1880; aged 74; died, January 11, 1930, of apoplexy. He was a son of the late Dr. Frederick Dorsey Mitchell, class of 1846, and a brother of the late Dr. Alexander R. Mitchell, class of 1887.

DR. ALBERT LAWRENCE MINER, Bellows Falls, Vt.; B. M. C., class of 1894; aged 60; died, November 9, 1929, of pancreatitis and acute cardiac dilatation.

DR. WALTER P. CRAVEN, Charlotte, N. C.; P. & S., class of 1883; aged 83; Confederate veteran; died, December 5, 1929, of cardiac disease.

DR. BALLARD R. SMITH, Baltimore, Md.; class of 1882; aged 69; died, January 29, 1929, of acute nephritis.

DR. SAMUEL K. PFALTZGRAFF, York, Pa.; class of 1886; aged 65; died, November 22, 1929, of cardiac disease.

DR. BERNARD ALLEN JENKIN, Wilmington, Del.; P. & S., class of 1909; aged 44; served during the World War; died October 23, 1929.

DR. ROBERT E. LEE, Wardensville, W. Va.; P. & S., class of 1892; aged 62; died, November 28, 1929, of gastric carcinoma.

DR. ADONIRAM L. FARRELL, Hallettsville, Texas; P. & S., class of 1883; aged 72; died in November, 1929.

DR. JENNINGS MATSON KING, Wellsville, Ohio; class of 1897; aged 57; died, December 8, 1929, following a gastro-jejunostomy for gastric ulcer.

DR. EDGAR JENNINGS GROSE, Fayetteville, W. Va.; P. & S., class of 1909; aged 53; died, October 13, 1929; of erysipelas.

DR. RODERICK H. GARY, Murfreesboro, N. C.; P. & S., class of 1881; aged 72; died, October 24, 1929, of cerebral hemorrhage.

DR. JAMES SMITH WEBSTER, Hancock, Md.; class of 1896; aged 58; died, February 28, 1929, of carcinoma of the gall-bladder.

DR. JAMES G. ALLISON, Ford City, Pa.; B. M. C., class of 1895; aged 61; aged 74; died, October 2, 1929, of cardiorenal disease.

DR. CLARENCE WARWICK HEFFENGER, Sykesville, Md.; class of 1881; aged 68; died, June 17, 1929, of entero-colitis.

DR. JAMES EDWIN CATTHELL, Moncure, N. C.; class of 1899; aged 53; died, January 5, 1930, of cardiac disease.

DR. MARCUS ELMORE BALDWIN, Pittsburgh, Pa.; B. M. C., class of 1900; aged 62; died, November 10, 1929, of cardiorenal disease.

DR. FREDERICK PRESTON TUCKER, Milton, N. C.; P. & S., class of 1882; aged 74; died, December 8, 1929, of cerebral hemorrhage.

DR. CHARLES O'DONOVAN, Baltimore, Md.; class of 1881; B.A., Georgetown University, 1878; M.A., Georgetown University, 1888; professor of diseases of children, Woman's Medical College, Baltimore, Md., 1894-1899; clinical professor of diseases of children, B. M. C., 1899-1912; professor of clinical medicine and pediatrics, University of Maryland, 1912-1921, and emeritus professor of the same chairs, 1921-1930; president of the Medical and Chirurgical Faculty of Maryland, 1910; son of Dr. Charles O'Donovan, class of 1853; grandson of Dr. John H. O'Donovan, class of 1824, and brother of Dr. John Henry O'Donovan, class of 1891; a prominent member of the medical fraternity of Maryland and a public spirited citizen; aged 69; died, January 23, 1930, of cardiac disease.

DR. PAUL EMERSON REYNOLDS, Baltimore, Md.; class of 1919; aged 34; was killed, January 26, 1930, in an automobile accident.

DR. HARDIN K. OSBURN, Owensboro, Ky.; P. & S., class of 1880; Bellevue Hospital Medical College, class of 1885; aged 72; died, January 19, 1930, of acute lobar pneumonia, consecutive to a fracture of the left femur.

DR. WILLIAM ROYAL STOKES, Baltimore, Md.; class of 1891; director of the bureau of bacteriology of the Baltimore City Health Department and professor of bacteriology, University of Maryland; aged 59; died, February 10, 1930, of psittacosis, contracted while collaborating in the investigation into the local psittacosis epidemic, with Dr. Daniel S. Hatfield, class of 1922, director of the bureau of communicable diseases, who himself is convalescing from the same disease. Dr. Stokes was assistant resident pathologist, Boston City Hospital, 1893-1895; bacteriologist, Baltimore Health Department, 1895-1930; lecturer on pathology, Baltimore Medical College, 1896-1898; associate professor histology and pathology, University of Maryland, 1898-1900; professor of bacteriology, College of Physicians and Surgeons, Baltimore, 1900-1916; professor of bacteriology, University of Maryland, 1916-1930. He was a prolific writer, an excellent teacher, a celebrated scientist, but above all, a real man. He was loved by all who knew him. His colleagues will sorely miss him. The University will find it difficult to replace him. The City of Baltimore has lost a valuable servant. His memory shall ever be revered by the alumni of the University of Maryland.

DR. CICERO W. LOVE, who was an able, well-known and much-loved physician and surgeon, recently died at his home, 422 S. Tennessee Avenue, Lakeland, Fla. Dr. Love had been going about his usual duties until noon of the same day of his death, at which time he complained of indigestion. About ten o'clock the evening of the same day his condition became serious and he died a short while afterward. Dr. Love was born in Union County, N. C., in 1876, attended the University of Maryland and graduated in 1903. He was engaged in practice for twenty-seven years, was prominent in his community in social and church work, was president of the Morrell Memorial Hospital staff, local surgeon for the Atlantic Coast Line Railroad, held membership in the Polk County Medical Society, the Florida Medical Association and the Southern Medical Association.

DR. JAMES D. LOVE, 2063 Oak Street, Jacksonville, Fla., prominent resident of this city since 1898, at which time he began practice. He died at 10.30 P. M., on March 26, 1930, following a three-day attack of pneumonia.

Dr. Love was born at Quincy, Fla., in 1873, and was son of Judge E. C. Love. He graduated at West Florida Seminary at Tallahassee with an A. B. degree and in medicine from the University of Maryland in 1897. He studied in Europe and chose Pediatrics as his specialty. He was chief of the Pediatric department of St. Luke's Hospital, consulting pediatrician of Duval County Hospital, physician in charge of the Florida Children's Home and a member of the Faculty of the Southern Pediatric Seminary at Saluda, N. C. He was also a member of the Duval County Medical Society, Florida Medical Association, American Medical Association and American College of Physicians.



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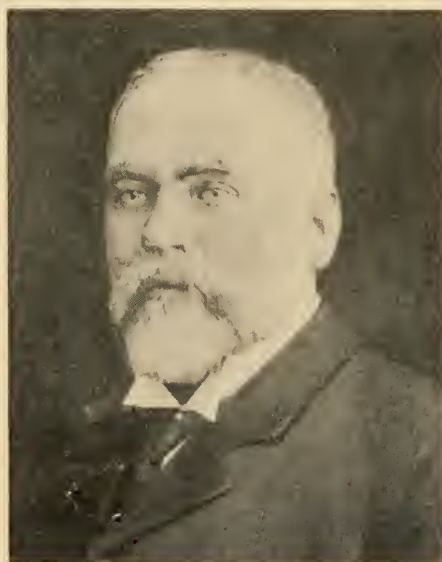
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DR. GEORGE JENKINS PRESTON

Born July 2, 1858; Died, June 17, 1908.
Professor of Nervous Diseases, College
of Physicians and Surgeons, Baltimore.

SPRING ACTIVITIES

The President and Board of Directors of the Medical Alumni Association, together with the Dean and Medical Council of the Medical School of the University of Maryland, cordially invite you to attend the *spring activities*.

PROGRAM

June 5th, 1930

9:00 A. M.-1:00 P. M.—Registration at the Medical Alumni House, directly opposite the Administration Building, University of Maryland, Lombard and Green Streets.

1:00 P. M.—Luncheon at University Inn.

2:00 P. M.—Series of Clinics.

4:00 P. M.—Annual Meeting, Medical Alumni Association, University of Maryland, in Chemical Amphitheatre, Administration Building, University.

7:30 P. M.—Annual Banquet, Lord Baltimore Hotel.

Secretary of the Medical Alumni Association:

Kindly send me.....ticket.. for the Alumni Banquet of the Medical Alumni Association, University of Maryland, to be held at the Lord Baltimore Hotel, Thursday evening, June 5th, at 7:30 P. M.

Enclosed please find subscription.... at \$5.00 per ticket.

(Name)

(Address)

(Detach and Mail to the Secretary)

GUESTS OF HONOR

PRESIDENT R. A. PEARSON,
University of Maryland

Graduates of 1930 School of Medicine, University of Maryland

June 6th, 1930

The following men have been appointed chairmen of the reunion committees:

- 1890—U. of Md.—W. S. Love, M. D.
P & S—Julius Friedenwald, M. D.
- 1900—B. M. C.—F. W. Smith, M. D.
P & S—E. B. Freeman, M. D.
U. of Md.—S. Demarco, M. D.
- 1904—All schools—H. K. Fleck, M. D.
- 1905—B. M. C.—H. C. Blake, M. D.
U. of Md.—R. D. Mitchell, M. D.
- 1910—U. of Md.—E. H. Kloman, M. D.
B. M. C.—Geo. C. McElfatrick, M. D.
P & S—Elwood T. Quinn, M. D.
- 1915—U. of Md.—Vincent Demarco, M. D.
P & S—A. R. McKenzie, M. D.
- 1920—U. of Md.—I. S. Zinberg, M. D.
- 1925—U. of Md.—T. Coonan, M. D.

June 7th, 1930

4:00 P. M.—COMMENCEMENT—LYRIC.

Secretary of the Medical Alumni Association:

Kindly send me.....ticket.. for the Luncheon at the Medical Alumni House, Thursday, June 5, at 1 P. M.

Enclosed please find subscription of \$1.00 per ticket.

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BULLETIN
OF THE
UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE
AND
COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. XIV

APRIL, 1930

NO. 4

ANNUAL ANNOUNCEMENT
SESSION 1930-31

This catalogue presents the teaching staff for the present year and the announcement of courses for the ensuing one. Changes in the teaching staff and list of graduates of the Class 1929-30 will appear in the July Bulletin.

CALENDAR OF BALTIMORE SCHOOLS

UNIVERSITY OF MARYLAND

Session 1930-1931

FIRST SEMESTER

1930

Monday, September 29—Registration begins.* (See School Bulletin for procedure.)

Monday, September 29—Instruction begins with the first scheduled period.

Saturday, October 4—Last day to register without paying fine of \$5.00.

Thursday, November 27—Thanksgiving.

Saturday, December 20—Christmas recess begins after the last scheduled period.

1931

Monday, January 5—Instruction resumed with the first scheduled period.

Saturday, January 31—First semester ends after the last scheduled period.

SECOND SEMESTER

Monday, February 2—Registration begins.* (See School Bulletin for procedure.)

Monday, February 2—Instruction begins with the first scheduled period.

Saturday, February 7—Last day to register without paying fine of \$5.00.

Monday, February 23—Holiday (Washington's Birthday).

Thursday, April 2—Easter recess begins after the last scheduled period.

Tuesday, April 7—Instruction resumed with the first scheduled period.

Saturday, June 6—Commencement Day.

*The offices of the Registrar and Comptroller are open daily (except Sunday) from 9.00 A. M. to 5 P. M.; Saturday 9.00 A. M. to 1 P. M.

THE UNIVERSITY OF MARYLAND

Control of the University of Maryland is vested in a Board of nine Regents, appointed by the Governor and confirmed by the Senate for terms of nine years each. The general administration of the University is vested in the President. The University Council is an advisory body, composed of the President, the Assistant to the President, the Director of the Agricultural Experiment Station, the Director of the Extension Service, and the Deans. The University Council acts upon all matters having relation to the University as a whole, or to cooperative work between the constituent groups. Each school has its own Faculty Council, composed of the Dean and members of its Faculty; each Faculty Council controls the internal affairs of the group it represents.

The University has the following educational organization:

- The College of Agriculture,
- The College of Engineering,
- The College of Arts and Sciences,
- The School of Medicine,
- The School of Law,
- The School of Dentistry,
- The School of Pharmacy,
- The College of Education,
- The College of Home Economics,
- The Graduate School,
- The Summer School,
- The Department of Physical Education and Recreation.

The Schools of Medicine, Law, Dentistry and Pharmacy are located in Baltimore; the others in College Park, Maryland.

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AUBREY C. SMOOT, M.D., Assistant in Gastro-Enterology.
T. TERRY BURGER, M.D., Assistant in Pediatrics.
W. T. SCHMITZ, M.D., Assistant in Pediatrics.
M. PAUL BYERLY, M.D., Assistant in Pediatrics.
HENRY GINSBERG, M.D., Assistant in Pediatrics.
WALTER B. JOHNSON, M.D., Assistant in Pediatrics.
H. E. LEVIN, M.D., Assistant in Bacteriology.
G. A. FRITZ, M.D., Assistant in Surgery.
H. L. WHEELER, M.D., Assistant in Surgery.
W. W. WALKER, M.D., Assistant in Surgery.
HENRY F. GRAFF, A.B., M.D., Assistant in Ophthalmology.
A. LLOYD MACLEAN, M.D., C.M., Assistant in Ophthalmology.
JOSEPH MILLETT, Ph.G., Ph.C., B.S., Assistant in Pharmacology.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

As a result of the merger accomplished in 1915 the combined schools offer the student the abundant resources of both institutions, and, in addition, by earlier combination with the Baltimore Medical College, the entire equipment of three large medical colleges.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was organized in 1807, and chartered in 1808, under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties, of Divinity, of Law, and of Arts and Sciences, and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

Established thus for more than a century, the School of Medicine of the University of Maryland has always been a leading medical college, especially prominent in the South and widely known and highly honored throughout the country.

The beautiful college building at Lombard and Greene Streets, erected in 1812, is the oldest structure in America devoted to medical teaching. Here was founded one of the first medical libraries and the first medical college library in the United States.

Here for the first time in America dissecting was made a compulsory part of the curriculum; here instruction in Dentistry was first given (1837), and here were first installed independent chairs for the teaching of Diseases of Women and Children (1867), and of Eye and Ear Diseases (1873).

The School of Medicine was one of the first to provide for adequate clinical instruction by the erection in 1823 of its own hospital, and in this hospital intramural residency for the senior student was first established.

In 1913, juncture was brought about with the Baltimore Medical College, an institution of 32 years' growth. By this association the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated in 1872, and established on Hanover Street in a building afterwards known as the Maternite, the first obstetrical hospital in Maryland. In 1878 union was affected with the Washington University School of Medicine, in existence since 1827, and the college was removed to its present location at Calvert and Saratoga Streets. By this arrangement medical control of the City Hospital, now the Mercy Hospital, was obtained, and on this foundation in 1899 the present admirable college building was erected.

ORGANIZATION OF THE SCHOOL OF MEDICINE

LABORATORY AND CLINICAL FACILITIES

The Laboratories

The laboratories are located at two centers, the group of buildings at Greene and Lombard Streets, and at 32 and 34 South Paca Street. The schedule is so adjusted that the laboratory periods are placed with a view of obviating unnecessary movement on the part of the classes. The building known as Gray Laboratory, at Greene and Lombard Streets, houses three departments. The Anatomical Laboratory is placed upon the top floor, where skylights and an auxiliary modern system of electric lighting gives adequate illumination of the subjects. On this floor are the office of the department and the necessary preparation rooms. The Department of Pharmacology occupies the second floor. There is a large room for the general student laboratory, which is thoroughly equipped with apparatus of recent acquisition, and in addition contains many instruments of unique and original design. With office and stockroom adjoining, this laboratory is complete for student experimentation. On the first floor of Gray Laboratory is the Department of Physiology. In addition to the large student laboratory, which is constructed for groups of forty-five students

there are rooms for the departmental office, preparation of material, and storage of apparatus. An additional room is devoted exclusively to mammalian experiments. In this building there is maintained an animal room where is kept an abundance of material for experimental purposes. The embalming and storage plant for the Department of Anatomy is in physical connection with the building and its special departments. The laboratories of physiology and pharmacology are completely equipped with apparatus lockers so that in accord with the best ideas of instruction, the students work in groups of two each, and each group has sufficient apparatus so that the experimental work can be carried on without delay or recourse to a general stockroom.

The laboratories of Pathology and Biochemistry, are located in the laboratory building on Greene St. above Lombard. The former department has a large student laboratory with a capacity of ninety; the tables are so placed as to secure the most satisfactory illumination for microscopic work, in addition, all of the tables are electrically equipped for substage illumination. This equipment is also provided for all laboratories where microscopic work obtains. The museum of the Department of Pathology adjoins the student laboratory. Here are available for demonstration about fifteen hundred carefully prepared and mounted specimens, and for laboratory instruction and study, an abundance of autopsy material with complete clinical histories. Several preparation, research, and office rooms communicate with the other rooms of this department. The laboratory of Biochemistry is constructed and equipped for sections of fifty. The laboratory is completely equipped for the facilitation of work. The office and stockroom adjoin. In the Main Building is the Museum of Anatomy, where are arranged for student reference, specimens which represent the careful selection of material over a period of many years. In the University Hospital is the Student Laboratory for the analytical studies by those students who are serving as clinical clerks on the wards. A similar laboratory is maintained in the building at the northwest corner of Saratoga and Calvert Streets, for the student work on the wards of the Mercy Hospital.

At 32 and 34 South Paca Street are two laboratories for Bacteriology, Histology, and Clinical Pathology. The two laboratories accommodate one hundred and twenty-five students or the full class,

and are equipped with necessary lockers for microscopes and apparatus. Each of the departments housed in this building are provided with their individual offices, preparation and stockrooms.

Clinical Facilities

UNIVERSITY HOSPITAL

The University Hospital, which is the property of the University of Maryland, is the oldest institution for the care of the sick in the State of Maryland. It was opened in September, 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for eye cases.

The present hospital has a capacity of 250 beds devoted to general medicine, surgery, obstetrics and the various medical and surgical specialties. It is equipped with a thoroughly modern X-ray department and clinical laboratory, and a post-mortem building which is constructed with special reference to the instruction of students in pathological anatomy.

The hospital is situated opposite the medical school buildings so that the students lose no time in passing from the lecture halls and laboratories to the clinical amphitheater, dispensary and wards.

Owing to its situation, being adjacent to the largest manufacturing district of the city and the shipping district, large numbers of accident cases are received. These combined with the cases of many sick seamen and with patients from our own city furnish a large amount of clinical material. Accommodations for twenty-five obstetrical patients are provided in the hospital for the purpose of furnishing actual obstetrical experience to each member of the graduating class.

In connection with the University Hospital an outdoor obstetrical clinic is conducted, in which every case has careful pre-natal supervision, is attended during labor by a senior student, supervised by a hospital physician and assisted by a graduate nurse, and is visited during the puerperium by the attending student and graduate nurse. Careful pre-natal, labor and puerperal records are kept, making this work of extreme value to the medical student, not only from the obstetrical standpoint, but in making him appreciate the value of social service and public health work.

During the year ending September 30, 1929, 368 cases were delivered in the hospital and 1039 cases in the outdoor department. Students in the graduating class delivered an average of fourteen cases, each student being required to deliver twelve cases.

The dispensaries associated with the University Hospital and the Mercy Hospital are organized upon a uniform plan in order that the teaching may be the same in each. Each dispensary has the following departments: Medicine, Surgery, Obstetrics, Children, Eye and Ear, Genito-Urinary, Gynecology, Gastro-Enterology, Neurology, Orthopaedics, Proctology, Dermatology, Throat and Nose, Tuberculosis and Psychiatry.

All students in their junior year work in the departments of Medicine and Surgery each day in one of the dispensaries.

All students in their senior year work in the special departments one hour each day.

HOSPITAL COUNCIL

RAYMOND A. PEARSON, M.S., D.Agr., LL.D., *President.*
 SAMUEL M. SHOEMAKER, ESQ., *President of the Board of Regents.*
 J. M. H. ROWLAND, M.D., *Dean.*
 M. C. PINCOFFS, S.B., M.D., *Head of the Department of Medicine.*
 A. M. SHIPLEY, M.D., Sc.D., *Head of the Department of Surgery.*
 A. J. LOMAS, M.D., D.P.H., *Superintendent of the Hospital.*
 MISS ANNIE CRIGHTON, R.N., *Superintendent of Nurses.*
 J. ALLISON MUIR, ESQ.
 G. M. SHRIVER, ESQ.
 W. B. BROOKS, ESQ.
 MISS FLORENCE SADTLER, *Representing Woman's Auxiliary Board.*

Representing Hospital Staff

G. MILTON LINTHICUM, A.M., M.D., C. REID EDWARDS, M.D.

Representing Medical Alumni

CHARLES W. MAXSON, M.D. FRANK W. KEATING, M.D.

UNIVERSITY HOSPITAL STAFF

Superintendent of the Hospital, A. J. LOMAS, M.D.

Physicians

GORDON WILSON, M.D.	MAURICE C. PINCOFFS, B.S., M.D.
HARRY M. STEIN, M.D.	G. CARROLL LOCKARD, M.D.
WALTER A. BAETJER, M.D.	JOSEPH E. GICHNER, M.D.
C. C. HABLSTON, M.D.	WILLIAM H. SMITH, M.D.

Gastro-Enterologist

JULIUS FRIEDENWALD, A.M., M.D.

Neurologist

IRVING J. SPEAR, M.D.

Psychiatrist

R. M. CHAPMAN, M.D.

Pediatrician

C. LORING JOSLIN, M.D.

Pathologists

HUGH R. SPENCER, M.D.

S. LLOYD JOHNSON, M.D.

Surgeons

RANDOLPH WINSLOW, A.M., M.D., LL.D.

ARTHUR M. SHIPLEY, M.D., Sc.D.

NATHAN WINSLOW, M.D.

PAGE EDMUNDS, M.D.

CHARLES REID EDWARDS, M.D.

FRANK S. LYNN, M.D.

Laryngologists

EDWARD A. LOOPER, M.D.

FRANKLIN B. ANDERSON, M.D.

Proctologists

G. MILTON LINTHICUM, A.M., M.D.

J. DAWSON REEDER, M.D.

Orthopaedic Surgeons

ROBT. W. JOHNSON, JR., A.B., M.D.

COMPTON RIELY, M.D.

RAYMOND LENHARD, A.B., M.D.

Genito-Urinary Surgeons

W. H. TOULSON, A.B., M.Sc., M.D.

LYLE J. MILLAN, M.D.

Roentgenologists

HENRY J. WALTON, M.D.

EUGENE L. FLIPPIN, M.D.

Dermatologists

MELVIN S. ROSENTHAL, M.D.

HARRY M. ROBINSON, M.D.

Bronchoscopist

WAITMAN F. ZINN, M.D.

Anaesthetists

S. GRIFFITH DAVIS, M.D.

SAMUEL W. MOORE, D.D.S.

W. G. QUEEN, M.D.

Obstetricians

J. M. H. ROWLAND, M.D.

L. H. DOUGLASS, M.D.

M. A. NOVEY, A.B., M.D.

J. G. M. REESE, M.D.

ISADOR H. SIEGEL, A.B., M.D.

MAURICE SHAMER, M.D.

Ophthalmologists and Otologists

CLYDE A. CLAPP, M.D.

HIRAM WOODS, A.M., M.D.

WILLIAM TARUN, M.D.

J. W. DOWNEY, M.D.

Gynecologists

W. S. GARDNER, M.D.

HUGH BRENT, M.D.

R. G. WILLSE, M.D.

UNIVERSITY HOSPITAL DISPENSARY STAFF

RESIDENT STAFF, 1930-31

<i>Resident in Surgery</i>	HUGH ALVIN BAILEY, M.D.
<i>Assistant Resident in Surgery</i>	GEORGE YEAGER, M.D.
<i>Assistant Resident in Surgery</i>	HENRY F. ULLRICH, M. D.
<i>Assistant Resident in Surgery</i>	LUTHER E. LITTLE, M.D.
<i>Resident in Medicine</i>	B. H. KENDALL, M.D.
<i>Resident in Gynecology</i>	WILLIAM H. VARNEY, M.D.
<i>Resident in Obstetrics</i>	T. F. VESTAL, M.D.
<i>Assistant Resident in Obstetrics</i>	W. PAUL DAILEY, M.D.
<i>Assistant Resident in Pediatrics</i>	WALTER B. JOHNSON, M.D.
<i>Assistant Resident in Roentgenology</i>	LUTHER E. LITTLE, M.D.

INTERNES, 1930-31

DR. EUGENE S. BROWN
 DR. CLAY E. DURBETT
 DR. MELVIN FAW, JR.
 DR. DANIEL E. FORREST, JR.
 DR. LEON J. HARRELL
 DR. JOHN C. HELMS
 DR. GEORGE D. HILL

DR. ROLLIN C. HUDSON
 DR. J. E. HORNBAKER
 DR. VERNIE E. MACE
 DR. DUNCAN S. OWEN
 DR. LOUIS R. SHULMAN
 DR. ROBERT WILSON, JR.
 DR. GEORGE J. SNOCPS, JR.

Medicine

H. M. STEIN, M.D., *Chief of Clinic*

WILLIAM MICHEL, M.D.
 A. L. FEHSENFELD, M.D.
 S. B. WOLFE, M.D.

W. H. TRIPLETT, M.D.
 LEO LALLY, M.D.
 THOMAS COONAN, M.D.

Diseases of the Stomach and Intestines

J. H. ULLRICH, M.D., *Chief of Clinic*

JOSEPH SINDLER, M.D.
 Z. MORGAN, M.D.
 AUBREY C. SMOOT, M.D.

M. S. KOPPELMAN, M.D.
 N. J. DAVIDOV, M.D.
 C. VANCE HOOPER, M.D.

Neurology

IRVING J. SPEAR, M.D., *Professor of Neurology*

G. M. SETTLE, M.D., *Associate Professor of Neurology*

LEON FREEDOM, M.D., *Chief of Clinic*

BENJAMIN PUSHKIN, M.D.

ROBERT HODES, M.D.

Mental Hygiene

RALPH P. TRUITT, M.D., *Director*

STEWART B. SNISSEN, M.D.

*Diseases of the Lungs*C. C. HABLSTON, M.D., *Chief of Clinic**Diseases of Metabolism*H. M. STEIN, M.D., *Chief of Clinic**Cardiovascular Diseases*WILLIAM S. LOVE, JR., M.D., *Chief of Clinic**Allergy Clinic*H. M. BUBERT, M.D., *Chief of Clinic**Pediatrics*C. LORING JOSLIN, M.D., *Professor of Clinical Pediatrics*JOHN H. TRABAND, M.D., *Chief of Clinic*CLARENCE E. MACKE, M.D., *Chief of Clinic*

ALBERT JAFFE, M.D.

WILLIAM J. TODD, M.D.

F. STRATNER OREM, M.D.

WILLIAM G. GEYER, M.D.

R. M. HENING, M.D.

MARIE KOVNER, M.D.

CLEWELL HOWELL, M.D.

SAMUEL GLICK, M.D.

M. N. PUTTERMAN, M.D.

A. H. FINKELSTEIN, M.D.

T. TERRY BURGER, M.D.

M. PAUL BYERLY, M.D.

LOUIS T. LAVY, M.D.

S. C. FELDMAN, M.D.

HENRY GINSBERG, M.D.

WALTER B. JOHNSON, M.D.

*Surgery*CHARLES REID EDWARDS, M.D., *Chief of Clinic*

H. M. FOSTER, M.D.

J. WILLIS GUYTON, M.D.

F. A. SIGRIST, M.D.

H. L. WHEELER, M.D.

THOMAS B. AYCOCK, M.D.

E. S. JOHNSON, M.D.

W. R. JOHNSON, M.D.

S. H. CULVER, M.D.

A. C. MONNINGER, M.D.

W. W. WALKER, M.D.

A. V. BUCHNESS, M. D.

G. A. FRITZ, M.D.

*Orthopaedic Surgery*ROBERT W. JOHNSON, JR., A.B., M.D., *Professor of Orthopaedic Surgery*RAYMOND LENHARD, A.B., M.D., *Chief of Clinic*

HARRY L. ROGERS, M.D.

CLIFFORD LEE WILMOTH, M.D.

W. A. SIMPSON, M.D.

I. H. MASERITZ, M.D.

CLEMENT R. MONROE, M.D.

MOSES GELLMAN, M.D.

*Genito-Urinary*W. H. TOULSON, M.D., *Chief of Clinic*

HARRIS GOLDMAN, M.D.

MILTON C. LANG, M.D.

J. H. COLLINSON, M.D.

H. C. KNAPP, M.D.

H. T. COLLENBERG, M.D.

L. K. FARGO, M.D.

LYLE J. MILLAN, M.D.

*Roentgenology*HENRY J. WALTON, M.D., *Chief of Clinic*

EUGENE L. FLIPPIN, M.D.

LUTHER E. LITTLE, M.D.

*Dermatology*H. M. ROBINSON, M.D., *Chief of Clinic*

J. E. GATELY, M.D.

FRANCIS ELLIS, M.D.

*Nose and Throat*E. A. LOOPER, M.D., *Clinical Professor of Diseases of Throat and Nose*FRANKLIN B. ANDERSON, M.D., *Chief of Clinic*

F. A. HOLDEN, M.D.

THOMAS O'ROURKE, M.D.

CHARLES H. CAHN, M.D.

EDWARD TALBOTT, M.D.

JOSEPH NURKIN, M.D.

*Colon and Rectum*MONTE EDWARDS, M.D., *Chief of Clinic**Gynecology*

J. M. HUNDLEY, JR., M.D.

A. V. BUCHNESS, M.D.

LEO BRADY, M.D.

GEORGE L. WISSIG, M.D.

WILLIAM J. FULTON, M.D.

*Obstetrics*L. H. DOUGLAS, M.D., *Chief of Clinic*

J. G. M. REESE, M.D.

M. ALEXANDER NOVEY, M.D.

MAXWELL MAZER, M.D.

ISADORE A. SIEGEL, A.B., M.D.

MAURICE SHAMER, M.D.

*Eye and Ear*CLYDE A. CLAPP, M.D., *Professor of Ophthalmology*

J. W. DOWNEY, M.D.

CHARLES CAHN, M.D.

JOHN G. RUNKEL, M.D.

A. L. MACLEAN, M.D., C.M.

H. F. GRAFF, A.B., M.D.

*Social Service*MISS GRACE PEARSON, *Directress*

Dispensary Report from October 1, 1928 to September 30, 1929

DEPARTMENTS	CASES		TOTAL
	NEW	RE-VISITS	
Pediatrics	2,918	18,331	21,249
Dermatology	5,191	10,086	15,277
Surgery	2,815	10,135	12,950
Obstetrics	1,656	5,890	7,546
Medicine	1,614	5,321	6,935
Genito-Urinary	910	3,472	4,382
Eye and Ear.....	1,326	2,586	3,912
Gynecology	1,300	2,532	3,823
Orthopedic	443	2,809	3,252
Nose and Throat.....	1,052	952	2,004
Neurology	234	814	1,048
Gastro-Intestinal	173	710	883
Cardiology	121	488	609
Proctology	110	307	417
Cystoscopy	45	152	197
Tuberculosis	50	112	162
Mental Hygiene	490	1,190	1,680
Total.....	20,448	65,878	86,326

MERCY HOSPITAL

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga Streets, then owned by the Washington University, in 1874. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of administering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly growing demands upon it. However, it was not until 1888 that the Sisters of Mercy, with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the cornerstone of the present Hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space has compelled the erection of additions, until now there are accommodations for 351 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

Mercy Hospital is located in the center of a city of 800,000 inhabitants.

The clinical material in the free wards is under the exclusive control of the Faculty of the University of Maryland School of Medicine and College of Physicians and Surgeons.

It adjoins the College building, and all surgical patients from the public wards are operated upon in the College operating rooms. This union of the Hospital and College buildings greatly facilitates the clinical teaching, as there is no time lost in passing from one to the other.

Mercy Hospital is the hospital of the United Railways and Electric Company of Baltimore City, and receives patients from the Baltimore and Ohio Railroad Company and from the Pennsylvania Railroad Company and its branches.

MERCY HOSPITAL STAFF

BOARD OF GOVERNORS

SAMUEL M. SHOEMAKER, ESQ., *Chairman*

REV. MOTHER M. CARMELITA

SISTER M. SIENA

SISTER M. HILDEGARDE

SISTER M. ANITA

SISTER M. HELEN

DR. ALEXIUS MCGLANNAN

DR. WALTER D. WISE

DR. THOMAS K. GALVIN

DR. ANDREW C. GILLIS

DR. STANDISH MCCLEARY

MERCY HOSPITAL STAFF

SURGICAL DIVISION

ALEXIOUS MCGLANNAN, A.M., M.D.

W. D. WISE, M.D.

C. F. BLAKE, M.D.

ELLIOTT HUTCHINS, M.D.

A. M. EVANS, M.D.

F. L. JENNINGS, M.D.

Associate Surgeons

R. H. LOCHER, M.D.

T. R. CHAMBERS, M.D.

I. O. RIDGLEY, M.D.

N. C. MARVEL, M.D.

D. J. PESSAGNO, M.D.

Assistant Surgeons

CHARLES MAXSON, M.D.

A. B. MCELWAIN, M.D.

T. J. TOUHEY, M.D.

DWIGHT MOHR, M.D.

H. F. BONGARDT, M.D.

J. W. NELSON, M.D.

Ophthalmologists and Otologists

HARRY FRIEDENWALD, M.D.

Associates

H. K. FLECK, M.D.

J. W. DOWNEY, M.D.

Rhinologists and Laryngologists

FRANK D. SANGER, M.D.

W. F. ZINN, M.D.

GEORGE W. MITCHELL, M.D.

RAYMOND MCKENZIE, M.D.

Associates

F. A. PACIENZA, M.D.

BURKHEAD MCGOWAN, M.D.

Proctologist

CHARLES F. BLAKE, M.D.

Orthopaedic Surgeon

ALBERTUS COTTON, M.D.

Associate

H. L. ROGERS, M.D.

Urologist

ALEXANDER J. GILLIS, M.D.

Associate

KENNETH B. LEGGE, M.D.

Dentists

JOHN FREDERICK, D.D.S.

J. D. FUSCO, D.D.S.

MEDICAL DIVISION

Physicians

MAURICE C. PINCOFFS, M.D.

STANDISH McCLEARY, M.D.

CARY B. GAMBLE, M.D.

HARVEY G. BECK, M.D.

Associates

HUBERT C. KNAPP, M.D.

C. C. W. JUDD, M.D.

H. R. PETERS, M.D.

BARTUS T. BAGGOTT, M.D.

GEORGE McLEAN, M.D.

A. A. SUSSMAN, M.D.

L. A. M. KRAUSE, M.D.

JOHN E. LEGGE, M.D.

Assistant Physicians

WETHERBEE FORT, M.D.

J. S. EASTLAND, M.D.

J. M. MILLER, M.D.

S. A. TUMMINELLO, M.D.

Gastro-Enterologist

JULIUS FRIEDENWALD, M.D.

Associates

T. FREDERICK LEITZ, M.D.

THEODORE MORRISON, M.D.

Assistants

MAURICE FELDMAN, M.D.

JOSEPH SINDLER, M.D.

Pediatricians

JOHN RUHBAH, M.D.

EDGAR B. FRIEDENWALD, M.D.

Associate Pediatrician

F. B. SMITH, M.D.

Assistant Pediatrician

W. F. SCHMITZ, M.D.

Neurologist and Psychiatrist

ANDREW C. GILLIS, M.D.

Associate

MILFORD LEVY, M.D.

Dermatologist

MELVIN ROSENTHAL, M.D.

MERCY HOSPITAL STAFF

OBSTETRICAL DIVISION

CHARLES E. BRACK, M.D.

A. SAMUELS, M.D.

W. S. GARDNER, M.D.

G. A. STRAUSS, M.D.

E. P. SMITH, M.D.

J. J. ERWIN, M.D.

T. K. GALVIN, M.D.

E. S. EDLAVITCH, M.D.

GYNECOLOGICAL DIVISION

Gynecologists

WILLIAM S. GARDNER, M.D.

GEORGE A. STRAUSS, M.D.

ABRAHAM SAMUELS, M.D.

E. P. SMITH, M.D.

T. K. GALVIN, M.D.

Associate

J. J. ERWIN, M.D.

Assistants

E. S. EDLAVITCH, M.D.

FRANK K. MORRIS, M.D.

PATHOLOGICAL DIVISION

STANDISH MCCLEARY, M.D.

HUGH R. SPENCER, M.D.

Clinical Pathologists

H. T. COLLENBERG

H. R. PETERS, M.D.

EMIL G. SCHMIDT, Ph.D.

Technicians

SISTER M. JOAN, Ph.G., R.N.

ANNA CHENOWETH, R.N.

FRANCES DONOVAN, R.N.

X-RAY DEPARTMENT

Radiographers

ALBERTUS COTTON, M.D.

HARRY L. ROGERS, M.D.

Technician—SISTER M. ANTONIA, R.N.

MERCY HOSPITAL RESIDENT STAFF

Resident Surgeon

JULIUS J. LEYKO, M.D.

Assistant Resident Surgeons

J. T. McANDREW, M.D.

ELDRED ROBERTS, M. D.

Resident Physician

E. EUGENE COVINGTON, M.D.

Assistant Resident Physician

EARL R. CHAMBERS, M.D.

Resident Gynecologist

SIMON BRAGER, M.D.

Internes 1930-1931

C. M. BAUMGARTNER, M.D.

G. BOWERS MANSDORFER, M.D.

M. D. BONNER, M.D.

JACK D. OWENS, M. D.

P. E. BERRY, M.D.

JOSEPH J. SMITH, M. D.

J. HOWARD BURNS, M.D.

HORACE G. STRICKLAND, M.D.

JACOB G. FERNAN, M.D.

W. MERLE WARMAN, M.D.

JULIUS GOODMAN, M.D.

RALPH F. YOUNG, M.D.

DISPENSARY STAFF OF MERCY HOSPITAL

Surgery Supervisors

A. M. EVANS, M.D.

N. C. MARVEL, M.D.

H. F. BONGARDT, M.D.

Attending Surgeons

D. H. MOHR, M.D.

H. F. BONGARDT, M.D.

I. O. RIDGLEY, M.D.

T. J. TOUHEY, M.D.

JOHN O'CONNOR, M.D.

J. W. NELSON, M.D.

Genito-Urinary Surgery

A. J. GILLIS, M.D.

K. B. LEGGE, M.D.

Orthopaedic Surgery

ALBERTUS COTTON, M.D.

HARRY L. ROGERS, M.D.

I. H. MASERITZ, M.D.

Medicine Supervisor

M. C. PINCOFFS, M.D.

*Attending Physicians*A. A. SUSSMAN, M.D., *Chief of Clinic*

J. M. MILLER, M.D.

S. SNYDER, M.D.

S. A. TUMMINELLO, M.D.

*Cardiovascular Diseases*A. A. SUSSMAN, M.D., *Chief of Clinic**Diseases of the Lungs*S. SNYDER, M.D., *Chief of Clinic**Diseases of Metabolism*J. S. EASTLAND, M.D., *Chief of Clinic**Allergic Diseases*H. M. BUBERT, M.D., *Chief of Clinic*

S. SNYDER, M.D.

*Diseases of Stomach**Supervisor*, JULIUS FRIEDENWALD, M.D.*Attending Physicians*

T. FREDERICK LEITZ, M.D.
 M. FELDMAN, M.D.
 THEODORE H. MORRISON, M.D.

JOSEPH SINDLER, M.D.
 I. I. LEVY, M.D.

Esophagoscopist

W. F. ZINN, M.D.

*Nervous Diseases**Supervisor*, A. C. GILLIS, M.D.*Attending Physicians*

MILFORD LEVY, M.D.

ROBERT HODES, M.D.

*Pediatrics**Supervisor*, EDGAR B. FRIEDENWALD, M.D.*Attending Physician*, W. J. SCHMITZ, M.D.*Diseases of Women**Supervisors*

W. S. GARDNER, M.D.

A. SAMUELS, M.D.

Attending Surgeons

E. P. SMITH, M.D.
 J. J. ERWIN, M.D.

T. K. GALVIN, M.D.
 C. F. J. COUGHLIN, M.D.

E. EDLAVITCH, M.D.

Diseases of Nose and Throat

W. F. ZINN, M.D.
 F. A. PACIENZA, M.D.

R. F. MCKENZIE, M.D.
 LOUIS SMALL, M.D.

B. MCGOWAN, M.D.

Diseases of Eye and Ear

H. F. FLECK, M.D.
 J. I. KEMLER, M.D.

M. RASKIN, M.D.
 F. A. PACIENZA, M.D.

BERNARD WESS, M. D.

Dermatology

MELVIN ROSENTHAL, M.D.

Social Service Department

SISTER M. HELEN, R.N.

VIRGINIA JUDGE

MERCY HOSPITAL DISPENSARY

	OLD	NEW	TOTAL
Surgical	1,962	802	2,764
Medical	1,537	902	2,439
Gynecological	511	258	769
Eye and Ear.....	372	251	623
Nose and Throat.....	547	473	1,020
Neurological	208	94	302
Children	232	197	429
Gastro-Intestinal	580	111	691
Dental	80	81	161
Rectal	77	45	122
Orthopedic	788	314	1,102
Skin	332	194	526
Genito-Urinary	2,889	514	3,403
Roentgenology			355
Totals	10,115	4,236	14,706

OTHER CLINICAL FACILITIES

THE BALTIMORE CITY HOSPITALS

The clinical advantages of the University have been largely increased by the liberal decision of the Board of Supervisors of City Charities to allow the immense material of these hospitals to be used for the purpose of medical education. There are daily visits and clinics in medicine and surgery by the Staff of the Hospitals. The autopsy material is unsurpassed in this country in amount, thoroughness of study, and the use made of it in medical teaching.

The Baltimore City Hospitals consist of the following separate hospitals:

The General Hospital, 204 beds.

The Hospital for Chronic Cases, 364 beds.

The Hospital for Tuberculosis, 177 beds.

The Psychopathic Hospital, 325 beds.

Infirmery (Home for Aged), 854 beds.

STAFF OF THE BALTIMORE CITY HOSPITALS
VISITING STAFF

THOMAS R. BOGGS, S.B., M.D., *Physician-in-Chief*.
 ARTHUR M. SHIPLEY, Sc.D., M.D., *Surgeon-in-Chief*.
 T. BAYRON AYCOCK, M.D., *Assistant Surgeon*.
 C. C. HABLSTON, M.D., *Physician-in-Chief to the Tuberculosis Hospital*.
 HARRY GOLDSMITH, M.D., *Physician-in-Chief, Psychopathic Hospital*.
 WILEY D. FORBUS, A.B., M.D., *Visiting Pathologist*.
 GEORGE H. RUMSBURG, M.D., *Resident Pathologist*.

CONSULTING STAFF

Gynecologists

R. G. WILLSE, M.D.

J. MASON HUNDLEY, JR., M.A., M.D.

Urologist

W. H. TOULSON, A.B., M.D.

Laryngologists

H. R. SLACK, M.D.

E. A. LOOPER, M.D.

W. F. ZINN, M.D.

FRANKLIN B. ANDERSON, M.D.

Pediatrician

LAWSON WILKINS, M.D.

Neurological Surgeon

CHARLES BAGLEY, M.D.

Psychiatrists

HENRY J. BERKLEY, M.D.

Orthopaedist

H. L. WHEELER, M.D.

Proctologist

LEWIS J. ROSENTHAL, M.D.

Assisting Visiting Physician

CHARLES R. AUSTRIAN, M.D.

Assistant Visiting Surgeons

FRANK S. LYNN, M.D.

C. A. REIFSCHNEIDER, M.D.

E. M. HANRAHAN, A.B., M.D.

Assistant Neurologist

CHARLES D. RYAN, M.D.

Assistant Physician—Tuberculosis

HENRY C. SMITH, M.D.

Ophthalmologist

CECIL BAGLEY, M.D.

Obstetrician

LOUIS H. DOUGLAS, M.D.

Dermatologist

ISAAC R. PELS, M.D.

Roentgenologist

JOHN W. PREISEN, M.D.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL
OF MARYLAND FOR CRIPPLED CHILDREN

This institution contains 62 beds for the active treatment of orthopaedic conditions. A new modern hospital building has just been constructed with every facility for operating and physiotherapy for bone and joint cases. It is situated just within the northwestern city limits on a large estate of 75 acres at Hillsdale.

The hospital has endowed beds, private beds and beds supported by the city and state. The location is ideal for the treatment of bone and joint conditions of all characters in children having all the advantages of country air and sunshine, together with easy access from the city.

The Children's Orthopaedic Dispensary at University Hospital is maintained in closest affiliation and cares for the cases discharged from the Kernan Hospital. The physiotherapy department is very well equipped with modern apparatus and trained personnel.

STAFF

Surgeon-in-Chief and Medical Director

ROBERT W. JOHNSON, JR., A.B., M.D.

Attending Orthopaedic Surgeon

ALBERTUS COTTON, A.M., M.D.

Associate Orthopaedic Surgeons

MOSES GELLMAN, B.S., M.D.

HARRY L. ROGERS, M.D.

W. A. SIMPSON, A.B., M.D.

Consulting Surgeons

J. M. T. FINNEY, A.B., M.D., D.S.M., F.R.C.S. (Eng. Ire.) Hon.

ARTHUR M. SHIPLEY, Sc.D., M.D.

Plastic Surgeon

JOHN STAIGE DAVIS, B.Sc., M.D.

Neuro-Surgeon

CHARLES BAGLEY, JR., A.B., M.D.

Consulting Oculist and Aurist

HIRAM WOODS, A.B., M.D., LL.D.

Oculist and Aurist

WILLIAM TARUN, M.D.

Laryngologist

EDWARD A. LOOPER, M.D.

Assistant Laryngologists

F. B. ANDERSON, M.D.

ALLEN HOLDEN, M.D.

EVERETT L. BISHOP, M.D.

MARSHALL P. BYERLY, M.D.

Dentists

J. B. BELL, D.D.S.

C. MERLE DIXON, JR., D.D.S.

Consulting Physicians

LEWELLYS F. BARKER, A.B., M.D.

THOMAS R. BROWN, A.B., M.D.

THOMAS B. FUTCHER, A.B., M.D.

WILLIAM S. THAYER, A.B., M.D.

Pediatrist

BENJAMIN TAPPAN, A.B., M.D.

Dermatologist

JOHN R. ABERCROMBIE, A.B., M.D.

Pathologist

SYDNEY M. CONE, A.B., M.D.

Attending Pathologist

HOWARD J. MALDEIS, M.D.

Neurologist

IRVING J. SPEAR, M.D.

Head Nurse

MISS GRACE LOVELL ELGIN, R.N.

Dispensary and Social Service Nurse

MISS MABEL S. BROWN, R.N.

Physiotherapists, Masseuses and Instructors in Corrective Gymnastics

MISS ANITA RENSIAW PRESSTMAN

MRS. GEORGIANA WISONG

MISS ELIZABETH EMORY

MISS FLORENCE GRAPE

Roentgenologists

ALBERTUS COTTON, A.M., M.D.

HENRY J. WALTON, M.D.

MRS. GEORGIANA WISONG

*Instructors in Grammar School*MISS MARY H. LEE, *Principal*MISS MARY SAMPSON, *Assistant**Superintendent and Business Manager*

MRS. M. E. LANE

ST. VINCENT'S INFANT ASYLUM

The facilities of this institution, containing 250 infants and children, have been kindly extended to the University of Maryland by the Sisters of Charity. This large clinic enables this school to present to its students liberal opportunities for the study of diseases of infants and children.

STAFF

Obstetrician

DR. L. H. DOUGLASS

*Pediatricians*DR. W. C. BACON
DR. C. R. GOLDSBOROUGHDR. CLEWELL HOWELL
DR. C. L. JOSLIN*Surgeon*

DR. N. WINSLOW

Dermatologist

DR. J. A. BUCHNESS

Oculists

DR. C. A. CLAPP

DR. F. B. ANDERSON

Orthopaedic Surgeon

DR. H. L. WHEELER

Physician

DR. C. P. CLAUTICE

Epidemiologist

DR. M. E. BALLARD

LIBRARIES

The University Library, founded in 1813 by the purchase of the collection of Dr. John Crawford, now contains 31,844 volumes, a file of 76 current (medical) journals, and several thousand pamphlets and reprints. It is well stocked with recent literature, including books and periodicals of general interest. The home of the Library is Davidge Hall, a comfortable and commodious building in close proximity to the classrooms and the Laboratories of the Medical Department. The Library is open daily during the year, except in August, for use of members of the Faculty, the students, and the profession generally.

The Library of the Medical and Chirurgical Faculty of Maryland, containing 60,000 volumes, is open to the students of the school. The leading medical publications of the world are received by the Library, and complete sets of many journals are available. Other Libraries of Baltimore are the Peabody (230,000 volumes) and the Enoch Pratt Free Library (598,265 volumes).

All these Libraries are open to the students of the school without charge.

ORGANIZATION OF THE CURRICULUM

The following curriculum is the result of a thorough revision of teaching in this school in order to meet modern requirements. The multiplication of specialties in medicine and surgery necessitates a very crowded course and the introduction of electives will very soon be depended on to solve some of the difficulties.

The curriculum is organized under eleven departments:

1. Anatomy (including Histology and Embryology).
2. Physiology.
3. Bacteriology and Immunology.
4. Biological Chemistry.
5. Pharmacology and Materia Medica.
6. Pathology.
7. Medicine (including Medical Specialties).
8. Surgery (including Surgical Specialties).
9. Obstetrics.
10. Gynecology.
11. Ophthalmology and Otology.

The instruction is given in four years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures and functions of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in Medicine and Surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insures attention to the needs of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

DEPARTMENT OF ANATOMY, INCLUDING HISTOLOGY AND EMBRYOLOGY

C. L. DAVIS, M.D.....	Professor of Anatomy
EDUARD UHLENHUTH, Ph.D.....	Associate Professor of Anatomy
JOHN F. LUTZ, M.D.....	Instructor in Histology
FRANK H. FIGGE, B.S.....	Assistant in Anatomy
THOMAS B. AYCOCK, M.D.....	Assistant in Anatomy
MONTE EDWARDS, M.D.....	Assistant in Anatomy
JOSEPH POKORNY, M.D.....	Assistant in Histology
J. HULLA, M.D.....	Assistant in Histology
R. W. JOHNSON, M.D.....	Assistant in Histology

GROSS ANATOMY. *First Year.* Four to five hours every day for approximately 20 weeks. The entire course centers around the dissection of the human body. Each student is given opportunity to dissect an entire half (left or right) of the body. The dissection is supplemented by lectures and informal discussions. (One lecture a week for five weeks.)

Anatomy is taught as an independent science, emphasis being laid on the human species as contrasted to animal morphology. An attempt is made to familiarize the student with the elements of anthropometry, with systematic and regional anatomy, with the principles of topographical anatomy and with osteology.

The actual dissection is preceded by a general examination of the body surface and superficial organs. Opportunity is provided for taking representative measurements of the head, face, trunk and limbs and of acquiring a knowledge of using anthropometric instruments. Throughout the dissection the student is encouraged to take measurements and weights of all the major organs, including the brain and the endocrine organs, and to obtain a knowledge of the proportions of each organ to the body as a whole as well as to the variability of these proportions.

The dissection is undertaken in relation to topographical regions of the body, but systematic relations are continuously emphasized and, wherever possible, brought out by actual dissection.

Osteology is taught in conjunction with the dissection of the muscles and the study of the functional mechanism of the skeleto-muscular apparatus. Each student is provided with a set of bones to aid him in his homework. A charge of \$6 is made for each set, \$4 of which is returned at the end of the year, while the remaining

\$2 are used for the upkeep of old and the purchase of new skeletal material. Fifty complete and perfect skeletons of the whole body and about as many of the limbs are available for reference and special advanced work.

At the end of the course the entire work is reviewed in a series of lectures presenting the entire anatomical basis of the most representative physiological activities, such as respiration, secretion, digestion, endocrine activity, parturition, etc.

Second, Third and Fourth Years. Opportunity is provided for advanced special dissections and for research work in every branch of anatomy. Dr. Eduard Uhlenhuth.

Total assigned hours, Gross Anatomy 426.

Histology and Embryology

First Year. Lectures, recitations and laboratory work, twelve hours each week for sixteen weeks. Histology and embryology are taught as a common subject, the histogenesis of a part preceding its histological study. (Lectures 20 hours; Laboratory 162 hours.)

The most important part of the work will be done in the laboratory, where each student will be provided with apparatus, staining fluids and material necessary for the preparation of specimens for microscopical examination. An important aid to the course is the projection microscope and balopticon which are used for the projection upon a screen of magnified images of the specimens actually used in the laboratory, and of illustrations from standard textbooks.

Each student is provided with a loan collection of histological slides, for which a deposit of \$10 is required. This deposit is refunded upon the return of the slides in a satisfactory condition. Dr. C. L. Davis and Dr. J. F. Lutz.

Neuro Anatomy

During the second semester 36 hours are devoted to an elementary course in Neuro Anatomy. The human brain is dissected and microscopical sections of representative levels of the brain stem studied. Laboratory talks and lantern slide demonstration supplement the students work, the entire course being based on an effort to familiarize the student with the structure of the central nervous system as applied to its physiology. Dr. Carl L. Davis. (Lectures 12 hours; Laboratory 24 hours.)

Graduate Courses

Anat. 101 f. (Minor). Human Gross Anatomy (10)—Five lectures, eighteen laboratory hours during October, November, December and January; three lectures and fifteen laboratory hours during February.

A complete dissection of the human body (exclusive of the central nervous system). Dr. Uhlenhuth and Dr. Aycock.

Anat. 102 f. (Minor). Mammalian Histology (6) One lecture, 11 laboratories.

A general survey of the histological structure of the organs of mammals and man. Opportunity is offered for examining and studying a complete collection of microscopical sections. Dr. Davis and Dr. Lutz.

Anat. 103 s. (Minor). Human Neurology (2)—3 lectures, 6 laboratory hours during May.

An elementary study of the human central nervous system.

This course is an introduction to the general structure of the central nervous system mainly directed towards the fibre tracts and the nuclei contained therein. It includes a brief study of the eye and the internal ear. The laboratory work is based on a systematic dissection of the human brain. Dr. Davis and Dr. Rubenstein.

Anat. 204 s. (Major). Advanced Neurology (4)—2 lectures, 4 laboratory hours April 1st to May 30th.

This is intended to amplify the minor course in neurology especially with reference to the anatomical structure and relations to the cranial nerves, and is essential to more advanced study in neurology. It consists essentially of a study of the brain stem. The laboratory work acquaints the student with the subject through the medium of appropriately prepared microscopic sections of the human brain stem. Neurology 103 s. or its equivalent is a prerequisite for this course. Dr. Davis.

Anat. 205 f. and s. (Major). For work leading to a Ph. D. in Anatomy. A study of neurological problems based on 103 s. and 204 s. Only students who have had preceding courses in neurology are eligible for this work. Dr. Davis.

Anat. 205 s. (Major). Comparative Morphology of the Endocrine Glands (at least 2) 1 lecture, 2 laboratory hours.

With the aid of preparations the comparative anatomy, histology and cytology of the endocrines of the vertebrates, including man, are studied. In addition the student is required to make a number of preparations.

It is intended to give the student appreciation of the structural basis of the physiological activity of the endocrine glands and of the gradual building up of the endocrine system during phylogenetic development from the lower vertebrates to man, making it possible to see the variations in the endocrines of higher vertebrates in the light of the phylogenetic potentiality of these organs. Dr. Uhlenhuth and Mr. Figge.

Anat. 207 f. and s. (Major). Advanced Endocrinology. (Credit and time dependent upon the student's qualifications.)

A study of the morphological equivalent of function. By means of proper experimentation the morphological responses of the endocrines to extrinsic and intrinsic factors are examined. This course will lead the student toward work for the Ph. D. in Anatomy. Dr. Uhlenhuth.

DEPARTMENT OF PHYSIOLOGY

FERDINAND A. RIES, M.D.

Associate Professor of Physiology and Acting Head of the Department

CHARLES C. CONSER, M.D.....Associate Professor of Physiology

O. G. HARNE, A.B.....Associate in Physiology

First Year. Lectures, laboratory and recitations in physiology are given the last eight weeks of the first year. The physiology of the muscle and nerve, of the central nervous system and of digestion and secretion is taken up in lectures and laboratory.

Second Year. A continuation of the first year course. The work consists of lectures and laboratory work on blood, circulation, internal secretions, special senses, respiration and metabolism.

	SUMMARY	First Year	Second Year
Lectures and recitation.....	37 hours	72 hours	
Laboratory	64 hours	87 hours	
Total	101 hours	159 hours	

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

FRANK W. HACHTEL, M.D.....Professor of Bacteriology

J. A. F. PFEIFFER, M.D.....Instructor in Bacteriology

HENRY F. BUETTNER, M.D.....Instructor in Bacteriology

H. E. LEVIN, M.D.....Assistant in Bacteriology

Instruction in bacteriology is given in the laboratory to the students of the second year during the first semester. This includes the various methods of preparation and sterilization of culture media, the study of pathogenic bacteria and the bacteriological examination of water and milk. The bacteriological diagnosis of the communicable diseases is also included in this course. Animal inoculations are made in connection with the bacteria studied. The most important protozoa are also studied in the laboratory. The principles of general bacteriology are taught by quiz, conference and lecture.

The principles of immunology are presented by means of quizzes, conferences and lectures to the second-year class throughout the second semester, and practical experiments are carried out by the class in laboratory sessions of three hours each, held two days a week for sixteen weeks. There is one lecture period a week during the second semester.

Lectures and recitations	16 hours
Laboratory	128 hours
Total	<u>144 hours</u>

DEPARTMENT OF BIOLOGICAL CHEMISTRY

H. BOYD WYLIE, M.D.....	Professor of Biological Chemistry
FRANK N. OGDEN, M.D.....	Associate in Biological Chemistry
EMIL G. SCHMIDT, Ph. D.....	Associate in Biological Chemistry
RUTH F. CARR, B.S.....	Assistant in Biological Chemistry

This course is designed to present the fundamental concepts of Biological Chemistry. The principal constituents and the phenomena of living matter are discussed in the lectures and studied in the laboratory. Training is afforded in routine biochemical methods of investigation.

Lectures	76 hours,
Conferences	20 hours,
Laboratory	120 hours.

PHARMACOLOGY AND MATERIA MEDICA

WILLIAM HENRY SCHULTZ, Ph.B., Ph.D.....	Professor of Pharmacology
JOHN M. HAYNES, B.A., M.A.....	Instructor in Pharmacology
RUTH MUSSER, B.A.....	Instructor in Pharmacology
JOSEPH MILLETT, Ph.G., Ph.C., B.S.....	Assistant in Pharmacology
WILLIAM GLENN HARNE.....	Demonstrator in Pharmacology

1. **MATERIA MEDICA AND PHARMACOLOGY.** The prerequisites to this and the following courses in pharmacology are college chemistry, pharmaceutical and biological chemistry. Special courses in physical and colloidal chemistry are highly recommended.

2. **SYSTEMATIC PHARMACOLOGY.** Second year. In teaching medical students the aim is to attain a mean between that which has a purely scientific bearing and that dominantly practical, so that both a critical attitude toward drugs and an understanding of the principles of dosage may be acquired. This is accomplished by lectures, quizzes, conferences and the following course of laboratory exercises.

3. **PHARMACODYNAMICS.** Second Year. This laboratory course runs parallel with Pharmacology 2.

In the first part of the course the experiments are upon normal animals (anaesthetised). Special emphasis is laid upon technic and upon the student's ability to record and properly analyze the results.

The second half of the course partakes more of the character of experimental medicine. Pathological animals are treated with chemotherapeutic agents and the toxicity of the drug for the host and for the parasite are studied. Students who by this time have demonstrated ability and initiative are encouraged to do intensive work along lines of special interest.

4. **PHARMACOLOGY OF GENERAL AND LOCAL ANESTHETICS AND Soporifics.** Four weeks, three lectures, three laboratory periods a week. This is a special course designed to meet the needs of physician and graduate nurse who wish to acquire a knowledge of the more recent developments in the pharmacology of depressant and sleep-producing drugs. The course is so arranged that those properly qualified may continue the work under expert anesthetists in the wards of the hospitals connected with the university. Professor Schultz.

Properly qualified students may be admitted, at the discretion of the head of the Department, to work outlined under graduate courses.

Materia Medica and Prescription Writing	
Lectures	20 hours
Conferences	10 hours
Laboratory	30 hours
Pharmacology	
Lectures	40 hours
Conferences	25 hours
Laboratory	102 hours

Graduate Courses

All students majoring in Pharmacology with a view to securing the degree of Master of Arts or Doctor of Philosophy should secure special training in Mammalian Physiology, Organic Chemistry 202 y, and Physical Chemistry 10 y or preferably 102 f.

Pharmacology 108 f. and s. (Minor). General Pharmacology (7), 3 lectures, 7 laboratory (January to May inclusive).

This course consists of 50 lectures and 40 laboratory periods of three hours each; offered each year, January to May inclusive, at Medical School. The fundamental principles of pharmacologic technic are taught in this course, hence it is a prerequisite for all other advanced courses in this subject. Dr. Schultz.

Pharmacology 209 f. (Major). The Pharmacology of Biologic Products.

This course involves problems of modern therapy that can be studied from the experimental physiological point of view, which includes such subjects as anaphylaxis, allergic reactions, anaphylactoid phenomena, non-specific protein therapy, toxins, antitoxins, and glandular products.

The seminars, lectures, and demonstrations will be somewhat broad in scope, but the research will be intensive along some one chosen subject.

Offered in alternate years beginning with 1930. Credit dependent upon quality of work. Dr. Schultz.

Pharmacology 210 f. (Major). The pharmacology of industrial poisons, including insecticides and parasite remedies. The nature of the subject matter of this course will vary from year to year. Credit will depend upon the amount and quality of the work accomplished.

Offered in alternate years beginning in 1931. Dr. Schultz.

Pharmacology 211 f. (Major). Chemotherapy.

The action of new synthetic compounds from a pharmacodynamic point of view. Credit will depend upon the amount and quality of the work accomplished. Dr. Schultz.

Pharmacology 212 f. and s. (Major). Pharmacology Seminar—One report period each week.

DEPARTMENT OF PATHOLOGY

HUGH R. SPENCER, M.D.....	Professor of Pathology
STANDISH McCLEARY, M.D.....	Professor of Pathology
SYDNEY M. CONE, M.D.....	Associate Professor of Pathology
ROBERT B. WRIGHT, M.D.....	Assistant Professor of Pathology
ALBERT E. GOLDSTEIN, M.D.....	Associate in Pathology
WALTER C. MERKLE, M.D.....	Associate in Pathology
M. ALEXANDER NOVEY, M.D.....	Instructor in Pathology
WM. S. LOVE, M.D.....	Instructor in Pathology
HOWARD M. BUBERT, M.D.....	Instructor in Pathology
LEON FREEDOM, M.D.....	Instructor in Pathology
M. H. GOODMAN, M.D.....	Instructor in Pathology
C. GARDNER WARNER, M.D.....	Instructor in Pathology
BENJAMIN ABESHOUSE, M.D.....	Instructor in Pathology
GEORGE H. RUMBERG, M.D.....	Assistant in Pathology
W. R. JOHNSON, M.D.....	Assistant in Pathology

Courses of instruction in Pathology are given during the second and third years. These courses are based on previous study of normal structure and function and aim to outline the natural history of disease. Instruction is made as practical as possible that the student may become familiar with the appearance of tissues in disease and may be able to correlate anatomical lesions with clinical symptoms and signs.

1. GENERAL PATHOLOGY. (*Second Year.*) This course includes the study and demonstration of disturbances of the body fluids, disturbances of structure, nutrition and metabolism of cells, disturbances of fat, carbohydrate and protein metabolism, disturbances in pigment metabolism, inflammation and tumors.

2. APPLIED PATHOLOGY. INCLUDING GROSS MORBID ANATOMY AND MORBID PHYSIOLOGY. (*Third Year.*) In this course the special relation of lesions to clinical symptoms and signs is emphasized.

In the laboratory the class is divided into groups for the study of classified autopsy material.

3. **AUTOPSIES** (*Third Year.*) Small groups of students attend autopsies at the morgues of the University Hospital and Baltimore City Hospital. They are required to assist and to prepare protocols.

4. **CLINICAL PATHOLOGY CONFERENCE.** (*Fourth Year.*) In collaboration with the Department of Medicine. Material from autopsies is studied with reference to the correlation of the clinical aspects with the pathological findings.

5. **ADVANCED WORK IN PATHOLOGY.** Properly qualified students will be permitted to carry out advanced or research work along the lines of experimental pathology.

SUMMARY

Second Year

Lectures	60 hours
Laboratory	150 hours

Third Year

Lectures	60 hours
Laboratory	120 hours

DEPARTMENT OF MEDICINE

MAURICE C. PINCOFFS, B.S., M.D.....	Professor of Medicine
GORDON WILSON, M.D.....	Professor of Medicine
STANDISH MCCLEARY, M.D.....	Professor of Pathology and Clinical Medicine
JOS. E. GICHNER, M.D.,	Professor of Clinical Medicine and Physical Therapeutics
G. CARROLL LOCKARD, M.D.....	Professor of Clinical Medicine
HARVEY G. BECK, Sc.D., M.D.....	Professor of Clinical Medicine
PAUL W. CLOUGH, B.S., M.D.....	Associate Professor of Medicine
C. C. W. JUDD, A.B., M.D.....	Associate Professor of Medicine
SYDNEY R. MILLER, M.D.....	Associate Professor of Medicine
WALTER A. BAETJER, A.B., M.D.....	Associate Professor of Medicine
HARRY M. STEIN, M.D.....	Associate Professor of Medicine
WM. H. SMITH, M.D.....	Associate Professor of Clinical Medicine
H. J. MALDEIS, M.D.....	Associate Professor of Medical Jurisprudence
S. LLOYD JOHNSON, M.D.....	Assistant Professor of Medicine
JOHN G. HUCK, M.D.....	Assistant Professor of Medicine
GEORGE MCLEAN, M.D.....	Assistant Professor of Medicine
C. C. HABLSTON, M.D.....	Assistant Professor of Medicine
L. A. M. KRAUSE, M.D.....	Assistant Professor of Medicine
H. R. PETERS, M.D.....	Assistant Professor of Medicine
H. M. BUBERT, M.D.....	Associate in Medicine
W. S. LOVE, JR., A.B., M.D.....	Associate in Medicine
A. A. SUSSMAN, M.D.....	Associate in Medicine
WILLIAM MICHEL, M.D.....	Instructor in Medicine
M. G. GICHNER, M.D.....	Instructor in Medicine
WILLIAM A. STRAUSS, M.D.....	Instructor in Medicine
HENRY SHEPPARD, M.D.....	Instructor in Medicine
WETHERBEE FORT, M.D.....	Instructor in Medicine
J. S. EASTLAND, M.D.	Instructor in Medicine
R. HOOPER SMITH, M.D.....	Assistant in Medicine
W. H. WOODY, M.D.....	Assistant in Medicine
THOMAS C. WOLFE, M.D.....	Assistant in Medicine
HENRY C. SMITH, M.D.....	Assistant in Medicine
NATHANIEL BECK, M.D.....	Assistant in Medicine
CARL BENSON, M.D.....	Assistant in Medicine
F. S. WAESCHE, M.D.....	Assistant in Medicine
A. SCAGNETTI, M.D.....	Assistant in Medicine
DAVID TENNER, M.D.....	Assistant in Medicine

GENERAL OUTLINE

SECOND YEAR

Introduction to clinical medicine.

- (a) Introductory physical diagnosis.
(1 hour a week, first semester.)
(2 hours a week, second semester.)
- (b) Medical clinics.
(1 hour a week, first semester.)

THIRD YEAR

I. The methods of examination (13 hours a week).

- (a) History taking.
- (b) Physical diagnosis.
- (c) Clinical pathology.

These subjects are taught and practiced in the out-patient department and in the clinical laboratory.

II. The principles of medicine (7 hours a week).

- (a) Lectures, clinics and demonstrations in general medicine, neurology, pediatrics and preventive medicine.

III. The principles of therapeutics (2 hours a week).

Lectures and demonstrations in general therapeutics, physical therapeutics and materia medica.

FOURTH YEAR

The practice of medicine.

I. Clinical clerkship on the medical wards.

(26 hours a week for ten weeks.)

- (a) Responsibility, under supervision, for the history, physical examination, laboratory examination and progress notes of assigned cases.
- (b) Ward classes in general medicine, the medical specialties, and therapeutics.

II. Clinics in general medicine and the medical specialties.

(6 hours a week.)

III. Dispensary work in the medical specialties.

IV. Clinical pathological conferences (1 hour a week.)

Medical Dispensary Work

The medical dispensaries of both the Mercy and the University Hospitals are utilized for teaching in the third year. Each student spends two periods a week of two hours each in dispensary work.

The work is done in groups of four to six students under an instructor. Systematic history-taking is especially stressed. Physical findings are demonstrated. The student becomes familiar with the commoner acute and chronic disease processes.

Physical Diagnosis

Second Year. Didactic lectures and practical demonstrations in topographical anatomy and normal physical signs.

Third Year. The class is divided into small groups, and each section receives instruction for four hours a week for the entire session in the medical dispensaries of the hospitals. The large clinical material of the dispensaries and hospitals is utilized to give each student the opportunity to familiarize himself with the common types of bodily structure, with the normal variations in physical signs and with the physical signs of the chief pulmonary, circulatory and abdominal diseases.

Therapeutics

Third Year. General therapeutics and materia medica are taken up and an effort is made to familiarize the student with the practical treatment of disease. The special therapy of the chief diseases is then reviewed. Two hours a week. Dr. Lockard.

The principles of physical therapy are taught in a special lecture and demonstration course consisting of six one-hour periods. Dr. Gichner.

Fourth Year. Special consideration is given to the practical application of therapeutic principles in bedside teaching and the chief therapeutic methods are demonstrated.

Tuberculosis

During the third year in connection with the instruction in physical diagnosis a practical course is given weekly to sections of the class at the Municipal Tuberculosis Hospital. Stress is laid upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

Syphilis

Third Year. During the third year the subject of syphilis is dealt with in the lecture course.

Fourth Year. An elective course in the therapeutic management of syphilis is offered in the dispensary.

CLINICAL PATHOLOGY

JOHN G. HUCK, M.D.....	Assistant Professor of Medicine Head of Department of Clinical Pathology
H. J. MALDEIS, M.D.....	Associate Professor of Medical Jurisprudence
M. G. GICHNER, M.D.....	Instructor in Medicine
WILLIAM A. STRAUSS, M.D.....	Instructor in Medicine
R. HOOPER SMITH, M.D.....	Assistant in Medicine

During the third year the student is thoroughly drilled in the technic of the usual clinical laboratory work, so that he is able to perform all routine examination which may be called for during his fourth year, in connection with the work in the wards and dispensary.

The practical work is supplemented by a series of didactic lectures and demonstrations in which the entire teaching staff of the department takes an active part. The microscopical and chemical study of blood, exudates and transudates, gastric juice, spinal fluid, feces and urine are successively taken up, and special attention directed to the clinical significance of the findings.

Clinical parasitology from the standpoint of the infecting agent and the carrier is given careful consideration.

The entire course is thoroughly practical. Each student has his own microscope and is provided with blood counters and hemoglobinometer for his exclusive use, and every two students with a special laboratory outfit for all routine purposes.

During the fourth year the student applies what he has learned during the preceding year in the laboratories of the various affiliated hospitals. He is also supplied with a laboratory outfit which is sufficiently complete to enable him to work independently of the general equipment. Special instructors are available during certain hours to give necessary assistance and advice.

Lectures	32 hours
Laboratory	96 hours

GASTRO-ENTEROLOGY

JULIUS FRIEDENWALD, A.M., M.D.....	Professor of Gastro-Enterology
T. FRED LEITZ, M.D.....	Clinical Professor of Gastro-Enterology
J. HARRY ULLRICH, M.D.....	Associate Professor of Gastro-Enterology
THEODORE H. MORRISON, M.D.....	Associate Professor of Gastro-Enterology
MAURICE FELDMAN, M.D.....	Assistant Professor of Gastro-Enterology
ZACHARIAH MORGAN, M.D.....	Associate in Gastro-Enterology
JOSEPH SINDLER, M.D.....	Associate in Gastro-Enterology
M. S. KOPPELMAN, M.D.....	Instructor in Gastro-Enterology
N. J. DAVIDOV, M.D.....	Instructor in Gastro-Enterology
ISIDORE I. LEVY, M.D.....	Instructor in Gastro-Enterology
C. VANCE HOOPER, M.D.....	Assistant in Gastro-Enterology
AUBREY C. SMOOT, M.D.....	Assistant in Gastro-Enterology

Fourth Year. Clinics, recitations and demonstrations to the class for one hour a week throughout the session. Dispensary instruction to small groups throughout the entire session. Practical instruction in the differential and clinical diagnosis and demonstrations of the newer methods of diagnosis in gastro-intestinal affections.

PSYCHIATRY

R. M. CHAPMAN, M.D.....	Professor of Psychiatry
H. S. SULLIVAN, M.D.....	Associate Professor of Psychiatry
LEWIS B. HILL, M.D.....	Associate in Psychiatry
HARRY GOLDSMITH, M.D.....	Instructor in Psychiatry

Third Year. In the third year the student attends fifteen clinical lectures and five clinics which are designed to be introductory to the more intensive work in psychiatry in the fourth year.

Fourth Year. The class is divided into sections for clinical conferences on selected groups of cases. Each student may work for a short period as assistant in the Mental Hygiene Clinic, and thus gain practical experience of the problems of history-taking, examination, and the care of psychiatric patients.

PEDIATRICS

EDGAR B. FRIEDENWALD, M.D.....	Professor of Clinical Pediatrics
C. LORING JOSLIN, M.D.....	Professor of Clinical Pediatrics
JOHN H. TRABAND, M.D.....	Assistant Professor of Pediatrics
CLARENCE E. MACKE, M.D.....	Assistant Professor of Pediatrics
ALBERT JAFFE, M.D.....	Assistant Professor of Pediatrics
WILLIAM J. TODD, M.D.....	Associate in Pediatrics
WILLIAM G. GEYER, M.D.....	Associate in Pediatrics
CLEWELL HOWELL, M.D.....	Associate in Pediatrics
SAMUEL S. GLICK, M.D.....	Associate in Pediatrics
F. STRATNER OREM, M.D.....	Instructor in Pediatrics
FREDERICK B. DART, M.D.....	Instructor in Pediatrics
FREDERICK SMITH, M.D.....	Instructor in Pediatrics
R. M. HENING, M.D.....	Instructor in Pediatrics
MARIE KOVNER, M.D.....	Instructor in Pediatrics
M. N. PUTTERMAN, M.D.....	Instructor in Pediatrics
A. H. FINKELSTEIN, M.D.....	Instructor in Pediatrics
T. TERRY BURGER, M.D.....	Instructor in Pediatrics
W. T. SCHMITZ, M.D.....	Assistant in Pediatrics
S. C. FELDMAN, M.D.....	Assistant in Pediatrics
M. PAUL BYERLY, M.D.	Assistant in Pediatrics
LOUIS T. LAVY, M.D.....	Assistant in Pediatrics
HENRY GINSBERG, M.D.....	Assistant in Pediatrics
WALTER B. JOHNSON, M.D.....	Assistant in Pediatrics

Third Year. Instruction during the third year consists of one lecture each week in which infant feeding and the most important diseases of infancy and childhood are especially emphasized. Drs. Joslin and Friedenwald.

Fourth Year. During this year a weekly clinical lecture is given where the character of disease is fully demonstrated and the students are afforded an opportunity for personal examination of all cases. In addition, ward classes are held weekly where bedside instruction is given. A section of the class also works daily at the Babies' and Children's Clinic. This clinic, which is under the direction of Dr. Joslin, has a yearly attendance of more than twenty thousand, and offers an excellent opportunity for study and observation of a wide variety of cases under competent instructors.

Instruction is also given on the Children's Ward at the Mercy Hospital.

NEUROLOGY

IRVING J. SPEAR, M.D.....	Professor of Neurology
ANDREW C. GILLIS, A.M., M.D., LL.D.....	Professor of Neurology
G. M. SETTLE, A.B., M.D.,	
Associate Professor of Neurology and Clinical Medicine	
BENJAMIN PUSHKIN, M.D.....	Associate Professor of Clinical Neurology
MILFORD LEVY, M.D.....	Assistant Professor of Neurology
LEON FREEDOM, M.D.....	Associate in Neurology
ROBERT HODES, M.D.....	Instructor in Neurology

Third Year. Lectures and recitations one hour each week to the entire class. Instruction in clinical neurology two hours a week at the City Hospital to small groups. By means of didactic lectures and clinical conferences, there are considered the commoner types of diseases of the nervous system, the methods of neurological examination, and the relationship of signs and symptoms to pathological conditions. The material at the University and Mercy Hospitals is available.

Fourth Year. Clinical conference one hour each week to the entire class. This subject is taught at the University and Mercy Hospitals. All cases presented at these clinics are carefully examined; complete written records are made by the students who demonstrate the cases before the class. The cases are usually assigned one or two weeks before they are presented, and each student in the class must prepare one or more cases during the year.

WARD CLASS INSTRUCTION. In small sections at the University and Mercy Hospitals. In these classes the students come in close personal contact with the cases in the wards under the supervision of the instructor.

DISPENSARY INSTRUCTION. Small sections are instructed in the dispensaries of the University and Mercy Hospitals four afternoons each week. In this way students are brought into contact with nervous diseases in their earlier as well as later manifestations.

HYGIENE AND PREVENTIVE MEDICINE

C. HAMPSON JONES, M.D., C.M.....	Professor of Hygiene and Public Health
V. L. ELLICOTT, M.D.....	Instructor in Hygiene and Public Health
M. G. TULL, M.D.....	Instructor in Hygiene and Public Health

Third Year. Two lectures a week throughout the session. The lectures will encompass the fundamental subjects: air, water, soil, food, disposal of wastes, communicable diseases, state and federal public health laws, and industrial diseases. Small groups visit the Sydenham Hospital weekly and are given practical instruction in the diagnosis, treatment and isolation of the contagious diseases.

Fourth Year. Demonstrations and discussion of Health Department work with emphasis on those phases which concern the practicing physician. The class is divided into small groups, each group making five visits to the Health Department of one to one and a half hours each.

MEDICAL JURISPRUDENCE

H. J. MALDEIS, M.D.....Associate Professor of Medical Jurisprudence
Baltimore City Post Mortem Physician

Fourth Year. One hour each week for one semester. (16 hours lecture.)

Inasmuch as Medical Jurisprudence teaches the application of every branch of medical knowledge to the needs of the law, civil or criminal, this course embraces the following: Proceedings in criminal and civil prosecution; medical evidence and testimony; identity in its general relations; sexual abnormalities; personal identity; impotence and sterility; rape; criminal abortions; signs of death; wounds in their medico-legal relations; death, natural and homicidal; malpractice; insanity and medico-legal autopsies

DEPARTMENT OF SURGERY

ARTHUR M. SHIPLEY, Sc.D., M.D.....	Professor of Surgery
ALEXIUS McGLANNAN, A.M., M.D.....	Professor of Surgery
NATHAN WINSLOW, A.M., M.D.....	Clinical Professor of Surgery
PAGE EDMUNDS, M.D.....	Clinical Professor of Industrial Surgery
WALTER D. WISE, M.D.....	Clinical Professor of Surgery
FRANK S. LYNN, M.D.....	Clinical Professor of Surgery
ELLIOTT H. HUTCHINS, A.M., M.D.....	Clinical Professor of Surgery
CHARLES REID EDWARDS, M.D.....	Clinical Professor of Surgery
THOMAS R. CHAMBERS, A.M., M.D.....	Associate Professor of Surgery
R. W. LOCHER, M.D.....	Associate Professor of Clinical Surgery
A. M. EVANS, M.D.....	Associate Professor of Surgery
F. L. JENNINGS, M.D.....	Associate Professor of Surgery
E. S. JOHNSON, M.D.....	Associate Professor of Surgery
E. H. HAYWARD, M.D.....	Associate in Surgery
C. A. REIFSCHNEIDER, M.D.....	Associate in Surgery
M. J. HANNA, M.D.....	Associate in Surgery
H. M. FOSTER, M.D.....	Associate in Surgery
D. J. PESSAGNO, M.D.....	Associate in Surgery
C. F. HORINE, M.D.....	Associate in Surgery
I. O. RIDGLEY, M.D.....	Instructor in Surgery
W. R. JOHNSON, M.D.....	Instructor in Surgery
E. M. HANRAHAN, A.B., M.D.....	Instructor in Surgery
H. F. BONGARDT, M.D.....	Instructor in Surgery
DWIGHT MOHR, M.D.....	Assistant in Surgery
WM. R. GERAGHTY, M.D.....	Assistant in Surgery
S. DEMARCO, M.D.....	Assistant in Surgery
CLYDE MARVEL, M.D.....	Assistant in Surgery
H. M. McELWAIN, M.D.....	Assistant in Surgery
J. G. ONNEN, M.D.....	Assistant in Surgery
A. V. BUCHNESS, M.D.....	Assistant in Surgery
KARL J. STEINMUELLER, A.B., M.D.....	Assistant in Surgery
THOMAS B. AYCOCK, A.B., M.D.....	Assistant in Surgery
ROBERT W. JOHNSON, M.D.....	Assistant in Surgery
S. H. CULVER, M.D.....	Assistant in Surgery
T. J. TOUHEY, M.D.....	Assistant in Surgery

The teaching is done in the Anatomical Laboratory and the dispensaries, wards, clinical laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and operating rooms of the Baltimore City Hospitals.

Instruction is given by means of lectures, recitations, dispensary work, bedside instruction, ward classes, and clinics. The work begins in the second year, and continues throughout the third and fourth years.

Second Year

TOPOGRAPHIC AND SURGICAL ANATOMY. The course is designed to bridge the gap between anatomy in the abstract, and clinical anatomy as applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory, and students are required to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected when necessary to bring out outlines and relations of structures.

DIDACTIC LECTURES. Two hours a week for one semester, augmented by demonstrations with specimens, charts, and cross section. Dr. Hanna.

LABORATORY. Twelve hours a week for 8 weeks. Dr. Hanna, assisted by Dr. Johnson.

PRINCIPLES OF SURGERY. This course includes history-taking, records of physical examinations and of operations and progress notes; the preparation of surgical dressings, suture materials and solutions. It includes inflammation, infections, ulcers, gangrene, fistulae and sinuses, hemorrhage, shock and tumors; the use of splints, bed frames, bone plates, bone grafts, etc., local anaesthesia and the preparation of patients for operations. Lectures and conferences. Two hours per week for one semester to the entire class. Dr. Edwards.

Third Year

GENERAL AND REGIONAL SURGERY. Principles of surgery and general surgery, three hours a week throughout the year to the entire class, lectures, recitations and clinics. Drs. Shipley and Wise.

The class is divided into groups and receives instruction in history-taking, gross pathology, and surgical diagnosis—at the bedside and in the dead-house of the Baltimore City Hospitals. Drs. Shipley, Lynn, Reifschneider and Hanrahan.

OPERATIVE SURGERY. Instruction is given in operative surgery upon the cadaver and on dogs. The class is divided into sections, and each section is given practical and individual work under the supervision of the instructors. Dr. Lynn, assisted by Drs. Winslow, Hayward, E. S. Johnson, Foster, Geraghty, Demarco, Horine, Pes-

sagno, Onnen, W. R. Johnson, Steinmueller, Sigrist, Culver and R. W. Johnson.

FRACTURES AND DISLOCATIONS. This course consists of instruction in the various forms of fractures, dislocations and their treatment. There is a regular schedule of didactic lectures, which is supplemented by practical demonstrations in diagnosis and treatment. This practical work is given at the Mercy, University and Baltimore City Hospitals. Drs. Lynn and Jennings.

SURGICAL DISPENSARY. Under supervision, the student takes the history, makes the physical examinations, attempts the diagnosis, and, as far as possible, carries out the treatment of the ambulatory surgical cases in the University and in the Mercy Hospitals. Mercy Hospital—Drs. Dwight Mohr, Ridgely, Touhey, Bongardt and McElwain. University Hospital—Drs. Lynn, Winslow, Edwards, E. S. Johnson and Foster.

Fourth Year

CLINICS. A weekly clinic will be given at the Mercy and at the University Hospitals to one-half the class throughout the year. As far as possible this is a diagnostic clinic. Mercy Hospital—Dr. McGlannan. University Hospital—Dr. Shipley.

SURGICAL PATHOLOGY. A weekly exercise of one hour at Mercy Hospital for one semester, at which specimens from the operating-room and museum are studied in the gross and microscopically, in relation with the case history. Dr. McGlannan.

INDUSTRIAL SURGERY. Operative and post-operative treatment of accident cases, with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. Edmunds.

CLINICAL CLERKSHIP. The personal study of assigned hospital patients, under supervision of the staffs of University and of Mercy Hospitals, history-taking, and physical examination of patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

WARD CLASSES. Ward class instruction in small groups will consist of ward rounds; surgical diagnosis, treatment and the after-care of operative cases. Mercy Hospital—Drs. McGlannan, Wise, Elliot Hutchins, Evans and Jennings. University Hospital—Drs. Shipley, Edmunds, Lynn and Edwards.

ANAESTHESIA

Second Year

Lectures on history of anaesthesia: Ancient and Modern. General physiology of anaesthesia. Special physiology of each anaesthetic agent. Different methods for producing general anaesthesia, with a detailed description of each. The selection of the anaesthetic and method best suited for its administration in particular cases. Difficulties and accidents during and following anaesthesia, their causes, prevention and control. Different methods of resuscitation. Blood pressure: Its significance and bearing on selection of the anaesthetic and use as a guide during anaesthesia.

Eight hours to the entire class. Drs. S. Griffith Davis and W. G. Queen.

Fourth Year

During the clinics and operations before small groups, each student will be required to observe the administration of anaesthetics and to keep a chart recording blood pressure, pulse and respiration under the direction of an instructor.

DERMATOLOGY

MELVIN ROSENTHAL, M.D.....	Professor of Dermatology
HARRY M. ROBINSON, M.D.....	Associate Professor of Dermatology
JOHN R. ABERCROMBIE, A.B., M.D.....	Associate in Dermatology
FRANCIS ELLIS, A.B., M.D.....	Instructor in Dermatology
A. C. MONNINGER, M.D.....	Assistant in Dermatology
M. H. GOODMAN, A.B., M.D.....	Assistant in Dermatology

Clinical conferences one hour each week to entire class. This course will consist of demonstrations of the common diseases of the skin.

Dispensary instruction, University Hospital, Mondays, Wednesdays and Fridays in the diagnosis and treatment of the common skin diseases. Drs. Abercrombie, Robinson and Gately. Dispensary instruction, Mercy Hospital. Dr. Rosenthal.

ORTHOPAEDIC SURGERY

ROBERT W. JOHNSON, JR., A.B., M.D.....	Professor of Orthopaedic Surgery
ALBERTUS COTTON, A.M., M.D.....	Professor of Orthopaedic Surgery
COMPTON RIELY, M.D.....	Clinical Professor of Orthopaedic Surgery

HARRY L. ROGERS, M.D.....	Associate in Orthopaedic Surgery
CLEMENT R. MONROE, M.D.....	Instructor in Orthopaedic Surgery
W. A. SIMPSON, A.B., M.D.....	Instructor in Orthopaedic Surgery
CLIFFORD LEE WILMOTH, B.S., M.D.....	Instructor in Orthopaedic Surgery
MOSES GELLMAN, M.D.....	Instructor in Orthopaedic Surgery
RAYMOND LENHARD, A.B., M.D.....	Associate in Orthopaedic Surgery
I. H. MASERITZ, M.D.....	Assistant in Orthopaedic Surgery

In this course didactic, clinical, bedside and out-patient instruction is given. This instruction is provided in the University Hospital Amphitheatre, Mercy Hospital and Dispensary, Kernan Hospital and Industrial School for Crippled Children, at "Radnor Park" and in the Dispensary of the University Hospital.

Lectures or clinics are held at each of the hospitals named in town once a week. In addition, a weekly bedside clinic is held for small sections of the class at "Radnor Park" and Mercy Hospital. Daily teaching in the Dispensary is stressed.

The course covers instruction in the special methods of examination, pathology, diagnosis and treatment in this specialty.

A brief outline and demonstration is also given of the apparatus employed in Physiotherapy, Muscle Training and Corrective Gymnastics.

ROENTGENOLOGY

HENRY J. WALTON, M.D.....	Professor of Roentgenology
ALBERTUS COTTON, M.D.....	Professor of Roentgenology
EUGENE L. FLIPPIN, M.D.....	Instructor in Roentgenology

An effort is made to familiarize the student with the appearance of normal Roentgenograms, after which instruction is given in the interpretation of the more common pathological lesions seen on the X-ray films and fluoroscopic screen. The history, physics and prac-

tical application of Roentgen Rays are alluded to, but not stressed. Weekly demonstrations are given to sections of the fourth year class.

DIATHERMY AND RADIUM THERAPY

CHARLES REID EDWARDS, M.D.,

Clinical Professor of Surgery

Students are taken in groups and are taught the indications for the use of radium in the treatment of malignant and non-malignant conditions. The course also includes the use of diathermy in the treatment of disease.

DISEASES OF THE THROAT AND NOSE

EDWARD A. LOOPER, M. D.....Professor of Diseases of the Throat and Nose

W. F. ZINN, M.D.....Clinical Professor of Diseases of the Throat and Nose

FRANKLIN B. ANDERSON, M.D....Associate in Diseases of the Throat and Nose

R. F. MCKENZIE, M.D.....Instructor in Diseases of the Throat and Nose

Third Year. Instruction to entire class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and modern methods of diagnosis. Lectures illustrated by lantern slides are given one hour weekly throughout the second semester by Dr. Looper.

Fourth Year. Dispensary instruction one and one-half hours daily, to small sections at the University and the Mercy Hospitals. The student is given opportunity to study, diagnose and treat practical cases under an instructor. Ward classes and clinical demonstrations are given one and one-half hours weekly throughout the session in the University and the Mercy Hospitals.

The Looper Clinic, recently established in the University Hospital for bronchoscopy and esophagoscopy, affords unusual opportunities for students to study diseases of the larynx, bronchus and esophagus. The clinic is open to students daily from 2 to 4 P. M., under direction of Dr. Looper.

GENITO-URINARY DISEASES

W. H. TOULSON, A.B., M.Sc., M.D.,

Associate Professor of Genito-Urinary Diseases

A. J. GILLIS, M.D.....Associate Professor of Genito-Urinary Diseases

HARRIS GOLDMAN, M.D.....Associate in Genito-Urinary Diseases

AUSTIN H. WOOD, M.D.....Associate in Genito-Urinary Diseases

L. K. FARGO, M.D.....Instructor in Genito-Urinary Diseases

L. J. MILLAN, M.D.,	.....Instructor in Genito-Urinary Diseases
K. D. LEGGE, M.D.	.....Instructor in Genito-Urinary Diseases
H. C. KNAPP, M.D.	.....Assistant in Genito-Urinary Diseases
H. T. COLLENBERG, M.D.	.....Assistant in Genito-Urinary Diseases
J. H. COLLISON, M.D.	.....Assistant in Genito-Urinary Diseases
WILLIAM EMRICH, M.D.	.....Assistant in Genito-Urinary Diseases

Third Year. Eight hours to the entire class. This course is a didactic one in the principles of Genito-Urinary Surgery. Dr. Toulson.

Fourth Year. The course includes urethroscopy, cystoscopy, ureter catheterization, renal functional tests, urography, urine cultures, etc. The teaching consists of clinics in the amphitheater, ward rounds, and attendance by members of the Senior class upon outpatients in the dispensary. The dispensary classes are carried on both at the Mercy and the University Hospital dispensaries. Every variety of venereal disease is here encountered, and this rich wealth of material is available for teaching purposes. In addition to this, a cystoscopic clinic is conducted in another part of the dispensary, where the students are given practical instruction in the modern diagnostic methods.

DISEASES OF THE COLON AND RECTUM

G. MILTON LINTHICUM, A.M., M.D.,	Professor of Diseases of Rectum and Colon
CHARLES F. BLAKE, M.D.	.....Professor of Diseases of Rectum and Colon
J. DAWSON REEDER, M.D.,	Associate Professor of Diseases of Rectum and Colon
L. J. ROSENTHAL, M.D.,	Associate Professor of Diseases of Rectum and Colon
MONTÉ EDWARDS, M.D.	.....Associate in Diseases of Rectum and Colon

Third Year. Six hours to the entire class. This course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and will cover the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Linthicum.

The class is divided into sections for clinical instruction in the Baltimore City Hospitals. Dr. Linthicum.

Fourth Year. Ward and Dispensary instruction is given in the University and Mercy Hospitals, where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope and examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Drs. Blake and Rosenthal. University Hospital—Drs. Linthicum and Reeder.

BRONCHOSCOPY AND ESOPHAGOSCOPY

WAITMAN F. ZINN, M.D.

Clinical Professor of Diseases of Throat and Nose

Clinical Lectures and Demonstrations once weekly at University and Mercy Hospitals.

Etiology, symptomatology, diagnosis and prophylaxis of foreign bodies in the air and food passages. Bronchoscopy as an aid in the diagnosis and treatment of diseases of the lungs. Bronchoscopy as an aid to the surgeon. Diseases of the trachea. Diseases of the esophagus. All the phases of these subjects that the general practitioner should know are demonstrated clinically.

OTOLOGY

J. W. DOWNEY, M.D., Professor of Otology.

The course in Otology is planned to teach a practical knowledge of the anatomy and physiology of the ear, its proximity and relationship to the brain and other vital structures. The inflammatory diseases, their etiology, diagnosis, treatment and complications are particularly stressed, with emphasis upon their relationship to the diseases of children, head-surgery and neurology.

Third Year. The entire class is given instruction by means of talks, anatomical specimens and lantern slides.

Fourth Year. Small sections of the class receive instruction and make personal examinations of patients under the direction of an instructor. The student is urged to make a routine examination of the ear in his ward work in general medicine and surgery.

DEPARTMENT OF OBSTETRICS

J. M. H. ROWLAND, M.D.....	Professor of Obstetrics
L. H. DOUGLASS, M.D.....	Professor of Clinical Obstetrics
CHARLES E. BRACK, M.D.....	Clinical Professor of Obstetrics
J. MCF. BERGLAND, M.D.....	Associate Professor of Obstetrics
E. P. SMITH, M.D.....	Associate in Obstetrics
EMIL NOVAK, M.D.....	Associate in Obstetrics
J. G. M. REESE, M.D.....	Associate in Obstetrics
M. A. NOVEY, A.B., M.D.....	Associate in Obstetrics
J. G. MURRAY, JR., A.B., M.D.....	Associate in Obstetrics
J. J. ERWIN, M.D.....	Instructor in Obstetrics
ISADORE A. SIEGEL, A.B., M.D.....	Instructor in Obstetrics
MAURICE SHAMER, M.D.....	Assistant in Obstetrics

Third Year. Three lectures and recitations each week by Drs. Bergland, Novak, Murray, Douglass and Rowland to entire class. Manikin Work, Drs. Brack, Smith and Erwin to sections of class at Mercy Hospital, and Drs. Douglass, Siegel and Rowland at University Hospital.

Fourth Year. Clinical Conference. One hour each week. Drs. Rowland, Douglass and Murray.

WARD CLASSES. Six hours per week for five weeks to sections of class at University Hospital. Drs. Douglass, Reese and Novey.

Each member of the Senior class is required to deliver twelve women in their homes under supervision of the teaching and resident staff.

DEPARTMENT OF GYNECOLOGY

WILLIAM S. GARDNER, M.D.....	Professor of Gynecology
HUGH BRENT, M.D.....	Associate Professor of Gynecology
ABRAHAM SAMUELS, M.D.....	Associate Professor of Gynecology
GEORGE A. STRAUSS, M.D.....	Associate in Gynecology
R. G. WILLSE, M.D.....	Associate in Gynecology
T. K. GALVIN, M.D.....	Associate in Gynecology
J. M. HUNDLEY, JR., M.D.....	Associate in Gynecology
LEO BRADY, M.D.....	Associate in Gynecology

Third Year. DIDACTIC WORK. A course of thirty lectures and recitations.

CLINICAL WORK. Six hours weekly for one trimester. In this course the student writes the clinical history of each patient in the ward, makes a general physical examination, including the blood and urine, before the patient is brought before the class. One student under supervision gives the anaesthetic, a pelvic examination is made by six students, and any operation required is then done before a section of the class small enough to see clearly what is being done and how it is done. On a subsequent day the whole group examines, microscopically, sections prepared from material removed from patients that have been before them.

DEPARTMENT OF OPHTHALMOLOGY

CLYDE A. CLAPP, M.D.....	Professor of Ophthalmology
M RANDOLPH KAHN, M.D.....	Clinical Professor of Ophthalmology
H. K. FLECK, M.D.....	Associate Professor of Ophthalmology
JOSEPH I. KEMLER, M.D.....	Associate in Ophthalmology
HENRY F. GRAFF, A.B., M.D.....	Assistant in Ophthalmology
A. LLOYD MACLEAN, M.D., C.M.....	Assistant in Ophthalmology

Third Year. Second semester, Course in Diseases of the Eye by M. Randolph Kahn, consisting of lectures and demonstrations upon the commoner diseases of the eye and its appendages with demonstration of refractive errors. Section work weekly demonstrating the use of the Ophthalmoscope upon both the Artificial Eye and Patients.

Fourth Year. CLINICS AND DEMONSTRATIONS IN DISEASES OF THE EYE, weekly, for one year. Dr. Clapp.

Course consists of demonstrations of both patients and lantern slides of the more common diseases of the eye and their relationship to general disease.

Weekly ward classes at both the University and City Hospitals during which the eye grounds of the various medical and surgical conditions are demonstrated, by Drs. Fleck, West, Kemler, and Graff.

Also daily demonstrations in the taking of histories, the diagnosis and treatment of the various conditions as seen in the dispensary.

Third Year

Lectures	20 hours
Laboratory	10 hours

Fourth Year

Lectures and demonstrations....	26 hours
Clinical work	20 hours

THE HISTORY OF MEDICINE

JOHN RATHBONE OLIVER, A.B., M.D., Ph.D.

Professor of the History of Medicine

During the past year the lectures have been entirely devoted to the History of Medicine in the Eighteenth Century. Ten lectures in all were given. The first five were devoted to a general survey of Eighteenth Century medicine beginning with a description of the historical background of the period. The five remaining lectures were devoted to outstanding personalities in the Eighteenth Century such as the Hunters, Jenner, Auenbrugger, Lettson, Meade. Thanks to the cooperation of the official photographer to the Medical Museum in Washington and to the photographic department of our own medical school the lectures were illustrated with long series of slides. During 1930-1931, it is proposed to devote the entire time to the Nineteenth Century. After that the four years' circle of lectures will begin over again with early medicine, Egyptian, Assyrian, Greek and Roman.

FIRST YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 29, 1930, TO JANUARY 31, 1931

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	Laboratory Histology and Embryology	Laboratory Histology and Embryology		Laboratory Histology and Embryology	Laboratory Histology and Embryology	Laboratory Anatomy
12.00 to 1.00	Lunch	Lunch		Lunch	Lunch	
1.00 to 2.00	Anatomy C. H. & A. H.	Anatomy C. H.		Anatomy C. H. & A. H.	Anatomy C. H.	
2.00 to 5.00	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	

SECOND SEMESTER, FEBRUARY 2, TO MARCH 28, 1931

9.00- 11.00		Laboratory Biological Chemistry Section A	Laboratory Biological Chemistry Section B	Laboratory Biological Chemistry Section A	Laboratory Biological Chemistry Section B	Laboratory Anatomy (Feb. 2-28)
11.00- 12.00	Biological Chemistry C. H.					
12.00 to 1.00	Lunch	Lunch	Lunch	Lunch	Lunch	(9-12) Neural Anatomy (Mch. 2-28)
1.00 to 2.00	Biological Chemistry C. H.	Biological Chemistry C. H.	Biological Chemistry C. H.	Biological Chemistry C. H.	Biological Chemistry C. H.	
Feb. 2-28) 2.00-3.00 and 3.00-5.00	Anatomy A. H. & C. H.	Anatomy A. H.	Anatomy A. H.	Anatomy A. H. & C. H.	Anatomy A. H.	
	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	
(Mar. 2 to 28) 2.00 to 5.00	Neural Anatomy			Neural Anatomy		

FIRST YEAR SCHEDULE

SECOND SEMESTER, MARCH 30 TO MAY 30, 1931

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 11.00		Laboratory Biological Chemistry	Laboratory Biological Chemistry	Laboratory Biological Chemistry	Laboratory Biological Chemistry	
11.00 to 12.00	Biological Chemistry C. H.	Section A Physiology Section B	Section A Physiology Section B	Section B Physiology Section A	Section B Physiology Section A	
12.00 to 1.00	Lunch	Lunch	Lunch	Lunch	Lunch	
1.00 to 2.00	Biological Chemistry C. H.	Biological Chemistry C. H.	Biological Chemistry C. H.	Biological Chemistry C. H.	Biological Chemistry C. H.	
2.00 to 3.00	Physiology C. H.	Physiology C. H.	Physiology C. H.	Laboratory Biological Chemistry	Laboratory Biological Chemistry	
3.00 to 4.00	Physiology C. H.		Physiology C. H.	Section B	Section A	
4.00 to 5.00				Physiology Section A	Physiology Section B	

LOCATIONS OF LECTURE HALLS AND LABORATORIES:

A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
 C. H.—Chemical Hall, N. E. Cor. Lombard and Greene Streets.
 Anatomy Laboratory—Third Floor, Gray Laboratory, Lombard and Greene Streets.
 Biological Chemistry Laboratory—Third Floor, Dental Building, Lombard and Greene Streets.
 Histology and Embryology Laboratory—32-34 S. Paca Street, Sixth Floor.
 Neural Anatomy Laboratory, 32-34 S. Paca Street, Sixth Floor.

FRESHMAN EXAMINATIONS: (A. H. & C. H.)

Histology & Embryology.....Jan. 31, 1931, 2-5 P. M.
 AnatomyFeb. 28, 1931, 2-5 P. M.
 Neural AnatomyMch. 28, 1931, 2-5 P. M.
 Biological ChemistryMay 26, 1931, 12-3 P. M.
 PhysiologyMay 27, 1931, 12-3 P. M.

SECOND YEAR SCHEDULE
FIRST SEMESTER, SESSION 1930-1931
Sept. 29, 1930 to Jan. 31, 1931

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 9.00 to 10.00	*Physiology A. H.	Physiology A. H.	Physiology A. H.	Laboratory	Laboratory	No Classes Scheduled
10.00 to 11.00	Pharmacology A. H.	Pharmacology A. H.	Pharmacology A. H.	Physiology Section A	Physiology Section B	
11.00 to 12.00	Pathology A. H.	Pathology A. H.	Bacteriology A. H.	Pharmacology Section B	Pharmacology Section A	
12.00 to 12.30 P. M.	Lunch	Lunch	(12-1 P. M.) Lunch	Lunch	(12-1 P. M.) Lunch	
12.30 to 1.30	Laboratory	Laboratory	(1-2 P. M.) Medicine C. H.	(1-2 P. M.) Physiology L. B.	(1-2 P. M.) Physiology A. H.	
1.30 to 2.30	Bacteriology	Bacteriology	(2-4 P. M.) Laboratory Bacteriology	(2-4 P. M.) Laboratory Bacteriology	(2-4 P. M.) Physical Diagnosis Univ. Hosp. Disp	
2.30 to 5.30	Laboratory Physiology Section A Pharmacology Section B	Laboratory Physiology Section B Pharmacology Section A				

Mid-Year Examinations—Jan. 26 to Jan 31, 1931

SECOND YEAR SCHEDULE

SECOND SEMESTER, SESSION 1930-1931

Feb. 2 to May 30, 1931

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 9.30	Surgery A. H.	Surgery A. H.	Immunology A. H.	Laboratory Pharmacology Section B	Laboratory Pharmacology Section A	(Feb.7-Mar.28) (10-11) Surgical Anatomy A. H.
9.30 to 10.30	Pharmacology A. H.	Pharmacology A. H.	Pharmacology A. H.			
10.30 to 11.30	Pathology A. H.	Pathology A. H.	Surgical Anatomy A. H.			
11.30 to 12.00	Lunch	Lunch	Lunch	Lunch	Lunch	(11-12) Surgery C. H.
P. M. 12.00 to 2.00	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	(12-1) Medical Clinic Amp.
2.00 to 3.00	(Mar. 2- May 23) Surgical Anatomy A. H.	Laboratory	Laboratory	(Mar. 9- May 23)	(Mar. 9- May 23)	
3.00 to 5.00	(Mar. 9- May 23) Laboratory Surgical Anatomy			Laboratory Surgical Anatomy	Laboratory Surgical Anatomy	

LOCATIONS OF LECTURE HALLS AND LABORATORIES:

A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.

C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.

L. B.—Law Building.

Laboratories:

Bacteriology—Sixth Floor, 32-34 S. Paca Street.

Immunology—Sixth Floor, 32-34 S. Paca Street.

Pathology—Third Floor, Dental Building, Lombard and Greene Streets.

Pharmacology—Second Floor, Gray Laboratory, Lombard and Greene Streets.

Physiology—First Floor, Gray Laboratory, Lombard and Greene Streets.

Surgical Anatomy—Third Floor, Gray Laboratory, Lombard and Greene Streets.

Amp.—Amphitheatre, University Hospital, Lombard and Greene Streets.

Univ. Hospital, Disp.—Dispensary, University Hospital, Lombard and Greene Streets.

*Physiology Course. Terminates January 24, 1931.

Final Examinations—May 25 to May 30, 1931

THIRD YEAR SCHEDULE

SESSION 1930-1931

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 9.30	Therapeutics C. H.	Pathology C. H.	Medicine C. H.	Surgery C. H.	Pathology C. H.	Surgery C. H.
9.30 to 10.30	Obstetrics C. H.	Surgery C. H.	Obstetrics C. H.	Medicine C. H.	Medicine C. H.	Therapeutic C. H.
10.30 to 1 P. M.	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch
1 to 2	Medical Clinic Amp.	Surgery A. H.	Neurology P. & S. 34	Gynecology P. & S. 34	(1.15 to 4.15)	Transfer
2.15 to 3.15	Pathology Laboratory	Pathology Laboratory	(2.30-4.30) Section A Clinical Medicine Surgery Gross Pathology at Baltimore City Hospitals	(2-3) Clinical Pathology P. & S. 34		(2-4) Section B Clinical Medicine Surgery Gross Pathology at Baltimore City Hospitals
3.15 to 4.15				*(3-4) Eye and Ear P. & S. 34		
4.15 to 5.15	Pediatrics A. H.	Obstetrics C. H.	(2.45-4.15) Section B Group Work Ophthalmos- copy Practical Obstetrics Univ. Hosp.	Preventive Medicine Legal Medicine Mental Hygiene P. & S. 34	Preventive Medicine C. H.	

From 10.30 A. M. to 1.00 P. M. the class is divided into two sections, one section reporting at Calvert and Saratoga Streets, the other at Lombard and Greene Streets.
C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.
A. H.—Anatomical Hall—N. E. Cor. Lombard and Greene Streets.
Amp.—Amphitheatre—University Hospital, S. W. Cor. Lombard and Greene Streets.
P. & S.—N. W. Cor. Calvert and Saratoga Streets. Rooms indicated on Second Floor.

At the beginning of the second semester Section "A" at Baltimore City Hospital on Saturdays, 2-4 P. M., and University Hospital on Wednesdays, 2.15-4.15 P. M.:
Section "B" at Baltimore City Hospital on Wednesdays, 2.30-4.30 P. M.

Mid-Year Examinations—Jan. 26 to Jan. 31, 1931

Final Examinations—May 18 to May 30, 1931

*Ear—First semester.
Eye—Second semester.

FOURTH YEAR SCHEDULE

SESSION 1930-1931

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 9.00 to 11.00	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery Gynecology	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery Gynecology	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery Gynecology
1.00 to 12.00	Orthopaedic Surgery Univ. Sec. Amp. P. & S. Sec. 51	Medical Clinic Univ. Sec. Amp. Surgical Pathology P. & S. Sec. 40	Clinical Pathological Conference Univ. Sec. C. H. P. & S. Sec. 34	Surgical Clinic Univ. Sec. Amp. P. & S. Sec. 51	Medical Clinic Univ. Sec. Amp. P. & S. Sec. 34	Pediatrics Clinic Univ. Sec. Amp. P. & S. Sec. 34
P. M. 12.00 to 2	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary
2.15 to 3.15	Dermatology Clinic (Full Class at Univ. Hosp.) Amp.	Neurology Clinic Univ. Sec. Amp. P. & S. Sec. 34	Eye and Ear Clinic (Full Class at Univ. Hosp.) Amp.	Obstetrical Clinic (Full Class at Univ. Hosp.) Amp.	Gastro-Enter- ology Clinic (Full Class at Univ. Hosp.) Amp.	Genito- Urinary Clinic P. & S. Sec. 51
3.30 to 5.00	P. & S. Sec. Ward Classes Medicine Urology Eye and Ear	Ward Classes Therapeutics Proctology Radiotherapy	P. & S. Sec. Ward Classes Medicine Roentgenology Preventive Medicine	Ward Classes Medicine Nose & Throat Physical Therapeutics	Ward Classes Neurology Psychiatry U. H. Orthopaedic Surgery Kernan Hospital	
3.30 to 5.00	Univ. Sec. Ward Classes Medicine Urology		Univ. Sec. Ward Classes Medicine Roentgenology Eye and Ear	(5 to 6 P.M.) March, April and May History of Medicine C. H.		

The Senior Class is divided into two sections, which report, one at Lombard and Greene Streets, the other at Calvert and Saratoga Streets, for one semester each, then rotate.

Each section of the class is divided into three groups—Medical, Surgical, and Special. These groups will rotate on the following dates:

First Semester

1st periodSept. 29-Nov. 1
2nd periodNov. 3-Dec. 6
3rd periodDec. 8-Jan. 24

Second Semester

1st periodJan. 26-Feb. 28
2nd periodMch. 2-Apr. 11
3rd periodApr. 13-May 16

C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets..

Amp.—Amphitheatre—University Hospital.

P. & S., 34—Second Floor, Calvert and Saratoga Streets.

P. & S., 40, 51—Fourth Floor, Calvert and Saratoga Streets.

Final Examinations—May 18 to May 23, 1931

REQUIREMENTS FOR MATRICULATION

Admission to the course in medicine is by a completed Medical Student Certificate issued by the Registrar of the University of Maryland. This certificate is obtained from the Registrar on the basis of satisfactory educational credentials, and is essential for admission to any class.

The minimum requirements for the issuance of the Medical Student Certificate are:

(a) The completion of a standard four-year secondary school course or the equivalent, and, in addition, at least

(b) Two years or sixty semester hours of college credits, including chemistry, biology, physics and English.

Women are admitted to the School of Medicine of this University.

(A) SECONDARY SCHOOL REQUIREMENTS

Graduation from an accredited secondary school, after pursuing a four-year course (based upon an approved elementary school course), or its full equivalent as demonstrated by entrance examinations.

Total entrance units required, 15; prescribed, 9; elective, 6.

Prescribed (9 units): English (I, II, III, IV), 3 units; algebra to quadratics, 1 unit; plane geometry, 1 unit; foreign language, 2 units of one language; history, 1 unit; and science, 1 unit.

Elective (6 units), of which not more than 4 units in vocational subjects, (agriculture, commercial, home economics, shop, and drawing) will be accepted: Agriculture, astronomy, biology, botany, chemistry, civics, commercial, drawing, economics, general science, geology, history, home economics, languages, mathematics, physical geography, physics, zoology, or any other subject offered in a standard secondary school for which graduation credit is granted toward college or university entrance.

(B) DETAILS OF THE COLLEGE REQUIREMENT

a. The preliminary college course shall extend through two college sessions of at least thirty-two weeks each of actual instruction, including final examinations.

b. In excellence of teaching and in content, the work of this preliminary college course shall be equal to the work done in the freshman and sophomore years in standard colleges and universities.

c. This preliminary college course shall include courses in physics, chemistry biology, English and a modern foreign language, each course to embrace at least six, eight or twelve hours of work in each subject, as shown in the schedule following:

SCHEDULE OF SUBJECTS OF THE TWO-YEAR
PREMEDICAL COLLEGE COURSE

Sixty Semester Hours Required

REQUIRED COURSES :	<i>Semester Hours</i>
Chemistry (a)	12
Physics (b)	8
Biology (c)	8
English Composition and Literature (d)	6
Modern Foreign Language	6
COURSES STRONGLY URGED :	
Additional English	
Comparative Vertebrate Anatomy	
Psychology and Logic	
Social Science	
Mathematics	
Quantitative Analysis, or other Advanced Chemistry	

A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be of not less than fifty minutes' duration net, at least, two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

(a) CHEMISTRY. Twelve semester hours required of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work, and four semester hours in organic chemistry, including two semester hours of laboratory work. In the interpretation of this rule, work in qualitative analysis may be counted as general inorganic chemistry.

(b) PHYSICS. Eight semester hours required, of which at least two must be laboratory work. This course presupposes a knowledge of plane trigonometry.

(c) BIOLOGY. Eight semester hours required, of which four must be laboratory work. This requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone.

(d) ENGLISH COMPOSITION AND LITERATURE. The usual introductory college course of six semester hours, or its equivalent, is required.

(e) FOREIGN LANGUAGE: Six semester hours minimum requirement. A reading knowledge of a modern foreign language is very strongly urged. French and German have the closest bearing upon modern medical literature.

COMBINED COURSE IN ARTS AND MEDICINE

A combined seven years' curriculum is offered, leading to the degrees of Bachelor of Science and Doctor of Medicine. The first three years are taken in residence at College Park, and the last four years in Baltimore, at the School of Medicine. The premedical curriculum constitutes the first two years' work, and the third year follows a general outline of prescribed and elective courses approved by the chairman of the premedical committee and the Dean of the College of Arts and Sciences.

Upon the successful completion of the first year in the School of Medicine, and upon the recommendation of the Dean, the degree of Bachelor of Science may be conferred by the College of Arts and Sciences at College Park.

Students are urged to consider carefully the advantages this combination course offers over the minimum requirements of the two years. By completing three years the training may be gradually broadened by a wider latitude in the election of courses in the arts subjects.

POST-GRADUATE STUDENTS

Graduates in medicine desiring to take the work of the senior year without being candidates for the degree, and, therefore, without examination, may receive a certificate of attendance on completing the full course satisfactorily.

The requirements for graduates in medicine admitted to the fourth-year class as candidates for the degree of Doctor of Medicine are the same as those enforced against undergraduates admitted to advanced standing.

Summer Post-Graduate Courses—In a later number of the Bulletin detailed announcement will be made of the Post-Graduate Summer Courses.

RULES

1. All students are required to take the spring examinations unless excused by the Dean. No student will be permitted to advance from a lower to a higher class with conditions.

2. Should a student be required to repeat any year in the course, he must pay regular fees.

3. A student failing in final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and to take examination in such other branches as may be required should he again be permitted to enter the school as a candidate for graduation.

4. The general fitness of a candidate for graduation will be taken into consideration by the Faculty as well as the results of his examination.

5. All students entering the School of Medicine of the University of Maryland are required to provide themselves with microscopes of a satisfactory type.

A standard microscope of either Bausch & Lomb, Leitz, Spencer Lens or Zeiss make, fitted with the following attachments, will fill the requirements:

Triple nose piece	10 x and 5 x Oculars
Wide aperture stage	16mm. and 4mm. Objectives
Quick Screw condenser (Abbe)	1.9mm. 1.25 N.A. Oil Immersion Lens

All the above rules, as well as the fees stated below, relate to the year ending June 6th, 1931 only. The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the Faculty deem it expedient.

FEES

Matriculation fee (paid once).....	\$10.00
Tuition fee (each year) for residents of Maryland.....	350.00
Tuition fee (each year) for non-residents.....	500.00
Laboratory fee (each year).....	25.00
Special and re-examination fee.....	5.00
Graduation fee	15.00

No fees are returnable.

The above fees apply to all students who matriculate in this institution in any class for the session beginning September 29, 1930.

All students, after proper certification, are required to register at the Registrar's Office. The last date of registration is October 4th, 1930.

Matriculation, laboratory and tuition fees for the first semester shall be paid at the time of registration, and for the second semester on or before February 7th, 1931.

Failure to meet these conditions will automatically debar the student from attendance on classes and other privileges of the University.

Students who fail to pay the tuition and other fees on or before the last day of registration for each term or semester, as stated in the catalogue, will be required to pay as an addition to the fees required the sum of Five (\$5.00) Dollars, and if the payment so required shall not be paid before twenty (20) days from the beginning of said term of semester, the student's name shall be stricken from the rolls.

When offering checks in payment of tuition and other fees, students are requested to have them drawn in the exact amount of such fees. Personal checks whose face value is in excess of the fees due will be accepted for collection.

Students who are minors are considered to be resident students, if at the time of their registration their parents or guardians have been residents of this State for at least one year.

Adult students are considered to be resident students, if at the time of their first registration they have been residents of this State for at least one year.

The status of the residence of a student is determined at the time of his first registration in the University, and may not thereafter be changed by him unless, in the case of a minor, his parents or guardians move to and become legal residents of this State.

PRIZES AND SCHOLARSHIPS

FACULTY PRIZE

To stimulate study among the candidates for graduation, the Faculty offers a Gold Medal to the candidate who secures the highest average during the four years of his course. Certificates of Honor are awarded to the five candidates standing next highest.

DR. JOSE L. HIRSH MEMORIAL PRIZE

A prize of \$50.00 is given each year by Mrs. David Myers as a memorial to the late Dr. Jose L. Hirsh, formerly Professor of

Pathology in this School, to the student in the third year who has done the most satisfactory work in Pathology during his second and third years.

DR. A. BRADLEY GAITHER MEMORIAL PRIZE

A prize of \$25.00 is given each year by Mrs. A. Bradley Gaither as a memorial to the late Dr. A. Bradley Gaither, to the student in the senior class doing the best work in Genito-Urinary Surgery.

SCHOLARSHIPS

The Dr. Samuel Leon Frank Scholarship

(Value \$125.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this University.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Medical Council "to a medical student of the University of Maryland, who in the judgment of said Faculty, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student who has successfully completed one year's work in this school, and no student may hold such scholarship for more than two years.

The Charles M. Hitchcock Scholarships

(Value \$125.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the University.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University upon nomination by the Medical Council to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Faculty satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

The Randolph Winslow Scholarship

(Value \$125.00)

This scholarship was established by Prof. Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Medical Council, to a "needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Medical Council that he is worthy of and in need of assistance."

The Dr. Leo Karlinsky Scholarship

(Value, \$200.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of this University.

The scholarship is awarded to a second-year student who at the end of the first year passes the best examination in Anatomy, Histology, Embryology, Physiology and Biological Chemistry.

The University Scholarships

Two scholarships are awarded by the University: One to a student of the College of Arts and Sciences appointed by the President, to be held for only one year; the other, which entitles the holder to exemption from payment of the tuition fee of the year, is awarded annually by the Medical Council to a student of the Senior Class who presents to the Medical Council satisfactory evidence that he is of good moral character and is worthy of and in need of assistance to complete the course.

Frederica Gehrmann Scholarship

This scholarship was established by the bequest of the late Mrs. Frederica Gehrmann and entitles the holder to exemption from pay-

ment of tuition fees. The scholarship is awarded to a third-year student who at the end of the second year passes the best practical examination in Anatomy, Physiology, Biological Chemistry, Pharmacology, Pathology, Immunology and Serology.

The Clarence and Genevra Warfield Scholarships

(Valuation, \$300.00 each)

There are five scholarships established by the Regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships will be available to students of any of the classes of the course in medicine. Preference is given to students from the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine, for a term of two years, in the county to which the student is accredited or in a county selected by the Council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Council, the money advanced by the Regents shall be refunded.

Israel and Cecelia E. Cohen Scholarships

(Value, \$250.00)

This scholarship was established by Miss Eleanor S. Cohen in memory of her parents, Israel and Cecelia E. Cohen. **Terms and conditions:** This scholarship will be available to students of any one of the classes of the course in Medicine; preference is given to students of the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the Council.

Daughters of Harmony Scholarship

(Value, \$100.00)

This scholarship is given each year by the Daughters of Harmony as part payment of the tuition of a needy student of good character. He must be a member of the senior class and a bona fide resident of Baltimore. He must be nominated by the Medical Council.

ANNUAL HOSPITAL APPOINTMENTS

On February 1st of each session the following annual appointments are made from among the graduates of the school:

TO THE UNIVERSITY HOSPITAL

Two Resident Surgeons	Two Resident Obstetricians
Two Resident Physicians	Thirteen Junior Residents on a
One Resident Gynecologist	Rotating Service

A number of students are appointed each year, at the close of the session, as Clinical Assistants in the University Hospital for the summer months.

TO THE MERCY HOSPITAL

Chief Resident Physician	One Resident Gynecologist
One Assistant Resident Physician	One Resident Obstetrician
Chief Resident Surgeon	Eight Junior Residents on a Rotat-
Five Assistant Resident Surgeons	ing Service

NOTICE TO STUDENTS

The personal expenses of the students are at least as low in Baltimore as in any large city in the United States. The following estimates of a student's personal expenses for the academic year of eight months have been prepared by students, and are based upon actual experience. In addition to these the student must bear in mind the expenditure for a microscope.

<i>Items</i>	<i>Low</i>	<i>Average</i>	<i>Liberal</i>
Books	\$50	\$75	\$100
College Incidentals	20	20	20
Board, eight months.....	200	250	275
Room rent	64	80	100
Clothing and laundry.....	50	80	150
All other expenses.....	25	50	75
Total.....	<hr/> \$409	<hr/> \$556	<hr/> \$720

Students will save time and expense upon their arrival in the city by going direct to the School of Medicine on the University grounds, N. E. Corner Lombard and Greene Streets, where the Secretary of Student Y. M. C. A., who may be found at his office on the premises, will furnish them with a list of comfortable and convenient boarding houses suitable to their means and wishes.

For further information, apply to

J. M. H. ROWLAND, M. D., *Dean*,

Lombard and Greene Streets.

MATRICULATES, UNIVERSITY OF MARYLAND SCHOOL OF
MEDICINE AND COLLEGE OF PHYSICIANS
AND SURGEONS 1929-1930

FOURTH YEAR CLASS

ARONOFKY, MILTON ROBERT, Ph.B., Connecticut	GOODMAN, JULIUS HENRY, Ph.G., Maryland
ASHMAN, HARRY, B.S.....New York	HAMER, WILLIAM ALEXANDER, B.S., North Carolina
BAUMGARDNER, GEORGE MARTIN, A.B., Maryland	HARRELL, LEON JACKSON, B.S., North Carolina
BAYLUS, MEYER MILBY, Ph.G...Maryland	HARSHA, GENE MELFORD, B.S., West Virginia
BELINKIN, WILLIAM, B.S....New York	HELMS, JOHN CHAPMAN, B.S....Virginia
BENFER, KENNETH LOUIS, A.B., Maryland	HILDENBRAND, EMIL JOHN CHRISTO- PHER, B.S. ....Maryland
BERKOWITZ, RUDOLPH, A.B....New York	HILL, GEORGE DELMAS, B.S., West Virginia
BERRY, ERWIN PHIFER...North Carolina	HORNBAKER, JOHN HARLAN, A.B., Maryland
BLUM, JOSEPH SIDNEY, Ph.G...Maryland	HUDSON, ROLLIN CARL, A.B....Maryland
BONNER, MERLE DUMONT.North Carolina	JACKSON, MARSHALL VADEN, North Carolina
BROWN, EUGENE SCOTT, B.S. West Virginia	JOHNSON, MARIUS PITKIN, A.B., Connecticut
BURNS, JOHN HOWARD, JR., A.B., Maryland	KELLER, FREDERICK DOYLE, B.S., West Virginia
CHANCE, LESTER THOMAS, B.S., North Carolina	KLEINMAN, ABRAHAM MORRIS, B.S., New York
CHENITZ, WILLIAM, B.S....New Jersey	KOVARSKY, ALBERT ELIAS, A.B. New Jersey
COHEN, ARCHIE ROBERT, Ph.G. Maryland	KRAEMER, SAMUEL HARRY, B.S., New Jersey
COHEN, IRVIN JOSEPH, Ph.G...Maryland	KREMEN, ABRAHAM, A.B.....Maryland
COHEN, MAX HURSTON, Ph.G...Maryland	KUHN, ESTHER FRANCES, A.B...Maryland
COPPOLA, MATTHEW JOSEPH, B.S., New York	LEVIN, MORTON LOEB, Ph.G...Maryland
DURRETT, CLAY EARL, B.S....Maryland	**LEVY, SOLOMON, A.B.....Palestine
DYAR, EDNA GERRISH, Ph.D., District of Columbia	LEWIS, FRANK RUSSELL.....Maryland
FARINACCI, CHARLES JOSEPH, A.B...Ohio	MACE, VERNIE EMMETT, B.S. West Virginia
FAW, WYLIE MELVIN, JR.....Maryland	MAGOVERN, THOMAS FRANCIS.New Jersey
FEMAN, JACOB GEORGE, A.B....New York	MANSDOEFER, GEORGE BOWERS, B.S., Maryland
FIOCO, VINCENT JAMES, B.S...New York	MILLER, BENJAMIN HERMAN, A. B., Maryland
FISHER, SAMUEL.....New Jersey	MILLER, ISAAC.....New Jersey
FORD, JOHN LEONARD, B.S. Pennsylvania	MILLER, JAMES ALTON, A.B....Maryland
FORREST, DANIEL EFLAND, B.S., North Carolina	MONTILLA, VICTOR JOSE.....Porto Rico
GAREY, JAMES LYMAN, B.S. Pennsylvania	MORTIMER, EGBERT LAIRD, JR., A.B., Maryland
GARFINKEL, ABRAHAM, B.S....New York	MOSER, CHARLES YARNELLE, B.S., West Virginia
GERNER, HARRY EZEKIEL, B.S., New Jersey	NEEDLE, NATHAN E.....Maryland
GERSTEN, PAUL FRANCIS.....New York	
GINSBERG, LEON, Ph.D.....New York	
GOLDMAN, LESTER MILTON, B.S., New Jersey	
GOLDSTEIN, JACOB EVERETT, B.S., New York	

FOURTH YEAR CLASS—Continued

OLIVER, ROBERT DELEON, B. S., North Carolina	SNOOPS, GEORGE JOHN, JR., A.B., Maryland
OPPENHEIM, JOSEPH HARRY...New York	SNYDER, NATHAN, Ph.G.....Maryland
OWEN, DUNCAN SHAW....North Carolina	SOLTROFF, JACK GERSON, B.S., Pennsylvania
OWENS, ZACK DONEY, B.S., North Carolina	SPERLING, NATHANIEL MORTIMER, B.S. ....New York
PERLMAN, ROBERT, B.S.....New York	STRICKLAND, HORACE GILMORE, B.S., North Carolina
REID, FRANCIS FIELDING, A.B..Maryland	THOMPSON, CARL TRUMAN, B.S., A.B., West Virginia
RINEBERG, IRVING EDWARD, B.S., New Jersey	WARMAN, WILTON MERLE, A.B., B.S., West Virginia
ROMANO, NICHOLAS MICHAEL Pennsylvania	WEINSTEIN, JACK, B.S.....New York
ROSENTHAL, ABNER HERMAN, B.S., New York	WERNER, AARON SETH.....New York
SHILL, BENJAMIN, A.B.....New Jersey	WOOLLEY, ALICE STONE, B.S...New York
SHULMAN, LOUIS ROBERT ..Maryland	YOUNG, RALPH FUNK.....Maryland
SMITH, JOSEPH JACOB, A.B..Connecticut	ZEIGER, SAMUEL, B.S.....New York

** Deceased.

THIRD YEAR CLASS

ADALMAN, PHILIP, Ph.G.....Maryland	ERNEST, ROY COOPER, A.B.....Ohio
ALLEN, HOWARD STANLEY..Pennsylvania	FELDMAN, SAMUEL, A.M.....Maryland
ANDREW, DAVID HOLMES, A.B., Maryland	FEUER, ARTHUR, B.S.....New York
ARNETT, THOMAS MORRISON, AB., B.S., West Virginia	FOSTER, RUTH .....Massachusetts
BALDWIN, KENNETH MALISON..Maryland	FRIEDMAN, JOSEPH, B.S.....New York
BAMBERGER, BEATRICE, A.B.....Maryland	GROSSMAN, ISADORE, A.B.....Maryland
BARTON, PAUL CANFIELD, B.S.....Ohio	GROVE DONALD BIRTNER.....Maryland
BAUMGARTNER, EUGENE IRVING, A.B., Maryland	GUNDRY, RACHEL KREBS, A.B..Maryland
BERMAN, HENRY IRVING.....Maryland	HANNUM, MARVIN RAY, B.S., West Virginia
BOGGS, WILLIAM CARROLL, A.B., B.S., West Virginia	HARRIS, JOSEPH WILLIAM.....Utah
BRICE, ARTHUR TALBOTT.....Maryland	HARTON, ROMAN ALBERT..North Carolina
BRILL, BERNARD, B.S.....New York	HELFRICH, RAYMOND FREDERICK, A.B., Maryland
BRILL, JOHN LEONARD, A.B., Pennsylvania	HOFFMAN, REUBEN, A.B.....Maryland
CASHWELL, ROY LEE, B.S., North Carolina	HOLLANDER, MARK BUCKNER, A.B., Maryland
CLONINGER, KENNETH LEE, B.S., North Carolina	HORNbrook, KENT MAIDLOW West Virginia
CONTRACT, ELI, A.B.....Maryland	JACOBSON, SAMUEL MAURICE, Ph.G., Maryland
DAVIS, MELVIN BOOTH, B.S....Maryland	JAKLITSCH, FRANK HENRY, B.S., New York
DAWSON, WILLIAM MADDREN, B.S., New York	JENSEN, CARL DANA F.....Washington
DONOHUE, BERNARD WALKER, A.B., Maryland	JETT, PAGE COVINGTON, A.B...Maryland
DRENGA, JOSEPH FRANCIS, A. B., Maryland	JONES, ARTHUR FORD.....Maryland
ECKSTEIN, HARRY, B. S.....New York	KARGER, ABRAHAM, B.S.....New York
EDEL, JOHN WESLEY, JR., B.S., Maryland	KAUFMAN, MAX, Ph.G.....New York
EISENBERG, DAVID SOLOMON, B.S., New York	KEEFE, WALTER JOSEPH, A.B., Connecticut
	KERMISCH, ALBERT, Ph.G., B.S., Maryland
	KILGUS, JOHN FRANK, JR..Pennsylvania
	KIMMINS, WILLIAM ELIAS, B.S., West Virginia

THIRD YEAR CLASS—Continued

KOHN, WALTER.....Maryland	ROSENBERG, BENJAMIN, B.S...New York
KRIEGER, JEROME LEON, A.B...Maryland	ROSENTHAL, HENRIETTA ESTELLE, Ph.B. ....Maryland
KROSNOFF, MICHAEL, B.S...Pennsylvania	ROZUM, JOHN CHARLES.....New York
LACHMAN, HARRY, B.S.....Maryland	SEAROLD, WILLIAM MERVEN, A.B., Maryland
LANGELOTTIG, HARRY VERNON, A.B., Maryland	SCHIMUNEK, EMMANUEL ALOYSIUS, A.B. ....Maryland
LANHAM, ALSTON GORDON, B.S., West Virginia	SEIDMAN, HERMAN HAROLD, B.S., New York
LENER, PHILIP FRANK, A.B...Maryland	SHAW, CHRISTOPHER CAMPBELL, Ph.B. ....Maryland
LESHINE, SIDNEY STARR, B.S., Connecticut	SHELLEY, HARRY SANDBERG, B.S., Maryland
LEVINE, DAVID ROBERT, B.S...New York	SHOCHAT, ALBERT JOSHUA, B.S., New York
LUBIN, PAUL .....Maryland	SIWINSKI, ARTHUR GEORGE, A.B., Maryland
MAHAN, EDGAR WADE, B.S., Pennsylvania	SKOVRON, MICHAEL, B.S...Pennsylvania
MALONEY, LEONARD EUGENE, B.S., West Virginia	SLATE, MARVIN LONGWORTH, A.B., North Carolina
MANKOVITCH, DESIDERIUS GEORGE, Pennsylvania	SLAVCOFF, ALEXANDER, B.S., Pennsylvania
MARTIN, THOMAS ADRIAN, Ph.G., Maryland	SMITH, SOLOMON, A.B.....Maryland
MASTERTON, JOHN FRANCIS..New Jersey	SPRECHER, MILFORD HARSH, B.S., Maryland
MEYER, LEO MARTIN, A.M....New York	STERLING, SUSANNE.....Maryland
MORRISON, CLARENCE FISHER, B.S., West Virginia	STEVENS, RUSSELL ALVIN, A.B., Pennsylvania
MOYERS, WALDO BRIGGS, A.B., West Virginia	TAYLOR, ROBERT BRUCE...Pennsylvania
MURPHY, RICHARD LAWRENCE, A.B., New Hampshire	VAN ORMER, WILLIAM ALFRED, Pennsylvania
NOCERA, FRANCISCO PAOLO...Porto Rico	WARREN, EDWARD WILLIAM...New York
PALITZ, LEO SOLOMON, A.M....New York	WHIMS, HAROLD CARTER, B.S., North Carolina
REHMEYER, WALTER OWEN, B.S., Pennsylvania	WIGDERSON, HENRY, B.S.....New York
RHOADS, JOHN PETER.....Pennsylvania	
RODRIGUEZ, MANUEL.....Porto Rico	
ROHM, ROBERT FRANKLIN..Pennsylvania	

SECOND YEAR CLASS

ABRASHKIN, MORTIMER DICK, B.S., Connecticut	CRECCA, ANTHONY DANIEL, Ph.G., New Jersey
AHROON, CARL RICHARD, A.B...Maryland	CURBIE, DWIGHT McIVER, A.B., North Carolina
ASHMAN, LEON, B.S.....Maryland	DAVIS, CARROLL KALMAN....New York
BELL, CHARLES RAYMOND, B.S., Pennsylvania	DEMARCO, SALVATORE JOSEPH, A.B., Maryland
BELL, JAMES RUSSELL....Pennsylvania	DIAMOND, JOSEPH GEORGE, B.S., New Jersey
BERCOVITZ, NATHAN.....New York	DUMLER, JOHN CHARLES, B.S., Maryland
BERGER, HERBERT, B.S.....New York	EICHERT, HERBERT, Ph.G.....Maryland
BLUM, SAMUEL DANIEL, B.S...New York	EISENBRANDT, WILLIAM HENRY, A.B., Maryland
BOGORAD, DANIEL EMIL.....Maryland	FEIN, JACK, B.S.....New York
BROWN, WILLIAM EDWARD....California	FISHBEIN, ELLIOT, M.S.....New York
BYER, JACOB, A.M.....New York	FLOM, CHARLES, Ph.G.....Maryland
CANNON, MARTIN .....Ohio	
CHIMACOFF, HYMAN .....New Jersey	
CLAYMAN, DAVID STANFORD, Ph.G., Maryland	

SECOND YEAR CLASS—Continued

FRANCE, ANDREW MENARIS, B.S., Maryland	MICKLEY, JOHN HOKE, B.S., Pennsylvania
GANZ, SAMUEL EVANS, A.M....New York	MILLER, MYRON JOSEPH, A.M., New York
GELLER, SAMUEL, B.S.....New Jersey	MOORES, JOHN DEUER.....Maryland
GERSHENSON, DAVID ABRAHAM, A.B., Maryland	NACHLAS, ARTHUR, A.B.....Maryland
GITTLEMAN, SOLOMON ELLMAN, B.S., New York	NEWNAM, ALPHEUS CARLTON..Maryland
GLASS, ALBERT JULIUS, Ph.G., Maryland	PANEBIANCO, RICHARD ROBERT, B.S., New York
GLUCKMAN, ALBERT GERSON, B.S., Delaware	PEAR, HENRY ROBERT.....New York
GORENBERG, HAROLD, A.B....New Jersey	PHILIP, ARTHUR JAY, B.S....New York
GROSH, JOSEPH WALTER, B.S., Pennsylvania	PINK, SOLOMON HARRIS, B.S., New Jersey
HALPERIN, DAVID.....New Jersey	PRIGAL, SAMUEL JEREMIAH, B.S., New York
HAMMELL, FRANK MULL.....New Jersey	PROCTOR, SAMUEL EDWARD, A.B., Maryland
HANTMAN, IRVIN, Ph.G.....Maryland	PRUSSACK, SOLOMON, M.S...New Jersey
HARRIS, JACOB, A.B.....New York	RECKSON, MORRIS MURRAY...New York
HECHT, MANES SCHEVER, A.B..Maryland	ROBERTS, MARION BUTLER, A.B., North Carolina
HENDLER, HYMAN BERNARD...Maryland	ROHM, JACK ZETH.....Pennsylvania
HULL, HARRY CLAY.....Maryland	ROSENTHAL, STEPHEN ISAIAH, Pennsylvania
JACOBSON, MEYER WILLIAM, A.B., Maryland	RUBENSTEIN, ROBERT.....New Jersey
KAPLAN, ABRAHAM NATHAN, M.S., New York	SAGER, HAROLD.....New Jersey
KARFGIN, ARTHUR, B.S.....Maryland	SANCHEZ, ROBERT LUIS, A.B....Mexico
KATZ, ABRAHAM, B.S.....New York	SAUNDERS, THOMAS SEWELL, Ph.G., Maryland
KATZ, LEONARD.....Maryland	SAVAGE, JOHN EDWARD, B.S., District of Columbia
KATZENSTEIN, LAWRENCE, B.S., Maryland	SCHWARTZ, DAVID ISRAEL, Ph.G., Maryland
KEISER, SYLVAN.....New York	SHACK, MAX HERMAN.....New Jersey
KLIMES, LOUIS FRANK.....Maryland	SHAW, JOHN JACOB, A.B....New Jersey
KOROSTOFF, BERNARD.....New York	SIEGEL, SIDNEY LEON, B.S., New Jersey
KRESS, MILTON BERNARD, Ph.G., Maryland	SILVERSTEIN, GEORGE, A.B...Connecticut
KRIEGER, ALEXANDER ALLAN, Pennsylvania	SIMMONS, JOHN FREDERICK...Maryland
LECHNER, SIDNEY ISRAEL, B.S., New York	SNYDER, JEROME, Ph.G.....Maryland
LEFKOWITZ, JACOB, B.S.....New York	SOLLID, AARON CHARLES, Ph.G., Maryland
LEGUM, SAMUEL, A.B.....Maryland	STATMAN, ARTHUR JAMES...New Jersey
LERNER, GEORGE, A.M.....New York	STEIN, CHARLES, A.B.....Maryland
LIEBERMAN, SAMUEL, M.S....New York	STEPHENSON, FRANK RICHARD.Maryland
LOUFT, REUBEN RICHARD, A.B., Maryland	TAYLOR, FRANCIS NICHOLSON, A.B., Virginia
MARKMAN, HARRY DAVID, B.S., New York	THOMPSON, HARRY GOFF.....Illinois
McGOVERN, WILLIAM JOSEPH, B.S., Pennsylvania	WIRTS, CARL ALEXANDER..Pennsylvania
McMILLAN, WILLIAM OWEN, West Virginia	YOUNG, ALEXANDER, A.B....New York
	ZUPNIK, HOWARD LESTER..Pennsylvania
	ZURAVIN, MEYER HARRY, B.S., New Jersey

FIRST YEAR CLASS

AARON, HAROLD HENRY, B.S., New York	HILL, NELSON MARKS.....Pennsylvania
*ABRAMOVITZ, ABRAHAM, B.S., Pennsylvania	HIMELFARB, ALBERT JOSEPH, A.B., Maryland
ALLEN, EDWIN JOHN.....New Jersey	*HOLLAND, CHARLES ALBERT, A.B., Maryland
ALPERT, GEORGE, A.B.....Massachusetts	HURWITZ, GEORGE HILLEL, A.B., Connecticut
AUSTRAW, HENRY HARRISON, Ph.G., Maryland	HYMAN, JOSEPH, B.S.....New York
BAKER, GEORGE STANSBURY, A.M., Maryland	HYMAN, MORRIS, A.B.....Connecticut
BAYLUS, JOSEPH, Ph.G.....Maryland	JONES, GRACE GERMANIA.....Maryland
BEANSTOCK, SAM, B.S.....New York	JUSTICE, JAMES THOMAS, JR., North Carolina
BECKER, MARTIN, M.S.....New Jersey	*KEEFE, RUSSELL JOSEPH, B.S., Connecticut
BELLIN, DAVID ELIAS, A.M.....New York	KENLER, MYRON LEWIS, A.B.....Maryland
BERNHARDT, WILLIAM, Ph.G., Maryland	KEOWN, LAURISTON LIVINGSTON, A.B., Maryland
BERNSTEIN, JOSEPH, Ph.G.....Maryland	KIMMEL, CHARLES.....New Jersey
BICCHIERI, NUNZIO ANTHONY, A.B., Massachusetts	KOCHMAN, LEON ARTHUR.....Maryland
BILCOVITCH, HARRY DAVID, A.B., Pennsylvania	KONIGSBERG, WILFRED KANE, A.B., New York
BLAKE, ALAN FRANKLIN.....Maryland	KREGLOW, ALAN FRANK District of Columbia
BLITZMAN, LOUIS, B.S.....New York	KURZ, THEODORE GEORGE, B.S., Connecticut
BOWDEN, LEROY MERRILL, B.S., Maryland	LANIER, VERNE CLIFTON, A.B., North Carolina
BOWMAN, HARRY DANIEL.....Maryland	LAYNE, FRANK HOPKINS.....Kentucky
BUCKE, WILLIAM FOWLER, A.B., Pennsylvania	LENTZ, GEORGE ELLARD, B.S., Pennsylvania
BUFFUM, EDWARD HENRY, B.S., New Hampshire	LIFLAND, BERNARD DANIEL, B.S., New Jersey
CAMPBELL, EDGAR THRALL, A.B., Maryland	LOWMAN, MILTON EDWARD, A.B., Maryland
CAPLES DELMAS.....Maryland	MAGINNIS, HELEN IRENE, A.B., Maryland
*CATON, FRANKLIN WALTER.....Maryland	MALINOSKI, WALLACE HENRY, Ph.G., Maryland
COATES, STEPHEN PAUL.....New York	MATHEKE, GEORGE ADOLPH.....New Jersey
COHEN, BERNARD SHAW, A.B., Delaware	MCANDREW, CHARLES ROGER Pennsylvania
COHEN, MARVIN MEYER.....New Jersey	MILLER, BENJAMIN, B.S.....New York
COMEGYS, RICHARD WILLIAMSON, A.B., Maryland	MILLER, MEYER GEORGE, B.S., New York
COMODO, NICHOLAS MARIUS, B.S., Connecticut	MOORE, JAMES IRVING, A.B.,...Maryland
DIEHL, HAROLD CLAYTON, B.S., Maryland	MOOSEY, GEORGE ANTHONY, A.B., Maryland
DI STASIO, FRANK, B.S.....Connecticut	NICHOLS MYERS LEE.....West Virginia
DRUCKER, VICTOR, B.S.....New York	NOVENSTEIN, SIDNEY, A.B., Connecticut
EMANUEL, MEYER, B.S.....New York	O'NEILL, JOSEPH BROWN.....Pennsylvania
ESPINOSA, MANUEL.....Porto Rico	OSSERMAN, KERMIT EDWARD, A.B., New York
ETRIND, MEYER GEORGE, B.S., Connecticut	PEER, GEORGE FOSTER....West Virginia
FINEMAN, JEROME, Ph.G.....Maryland	PICO, JOSE TEODORE.....Porto Rico
FRANKLIN, FRANK ANTHONY New Jersey	RACUSIN, NATHAN, Ph.G.....Maryland
FROST, GEORGE LEWIS, A.B., New Jersey	REARDON, WILLIAM THOMAS, A.B., Delaware
*GARCIA-MENDEZ, CARLOS....Porto Rico	RICHARDSON, JACK.....West Virginia
GILBERT, ARTHUR, B.S., New Hampshire	ROBINSON, DANIEL ROBERT, B.S., New York
GOLDMAN, ABRAM, Ph.G.....Maryland	ROSENBAUM, LOUIS COLMAN, B.S., New Jersey
GOLDMAN, ALEXANDER BLODNICK, B.S., New York	ROSENBERG, ARTHUR, B.S.....New York
GOLDMAN, MEYER LEO, A.B., New York	ROSENBERG, MORRIS MURRAY, B.S., New York
GOLDSTEIN, MORTON ALLEN.....Maryland	ROSENBLATT, GEORGE DANIEL, B.S., New York
HANAGAN, JOHN JOSEPH, B.S., New Hampshire	ROSENFELD, DAVID HERMAN, Ph.G., Maryland
HARRIS, EARLE HAROLD.....New York	
HELLER, MITCHELL STARABIN, B.S., New York	
*HICKEY, JOHN FRANCIS.....Pennsylvania	
HIGHSTEIN, GUSTAV, Ph.G.....Maryland	

*Did not complete the year.

FIRST YEAR CLASS—Continued

ROSENSTEIN, SIDNEY SOLOMON, B.S., New Jersey	SEDLACEK, JOSEPH ARTHUR...Maryland
RUBIN, SAMUEL S., Ph.G.,....Maryland	SHEA, CORNELIUS JOSEPH...Connecticut
*RUTH, GEORGE ELWOOD, B.S., Pennsylvania	SMITH, ASHBY WADE....North Carolina
RUTLAND, HEDLEY ETHELBERT, B.S., Pennsylvania	SOLTIS, MICHAEL JOSEPH WIECIECH, A.B.,.....Maryland
SAPPERSTEIN, JACOB HALROLD, Ph.G., Maryland	SOLTZ WILLIAM BOYER, B.S., New York
SASSCER, JAMES GHISELIN, B.S., Maryland	STACKHOUSE, HOWARD.....New Jersey
*SATOU, MARCUS, Ph.G.,.....Maryland	STEIN, MILTON ROBERT, Ph.G., Maryland
SATULSKY, EMANUEL MILTON New Jersey	STERN, MAURICE LEE, A.B....New York
SCHIFF, HYMAN, A.B.,.....Maryland	STEWART, GARLAND.....West Virginia
SCHIFF, JOSEPH, A.B.,.....Maryland	SZULE, STEPHEN, Ph.M.....New Jersey
SCHINDLER, BLANE MARKWOOD, Ph.G., Maryland	TAYLOR, CLIFFORD MORRISON..Maryland
SCHLACHMAN, MILTON, Ph.G., Maryland	TEITELBAUM, HARRY ALLEN, B.S., New York
SCHMIDT, GEORGE MATTHEW, Ph.G., Maryland	THUMIM, MARK, B.S.,.....New York
SCHNEIMAN, MAURICE HARRIS, A.B., Pennsylvania	TURANO, LEONARD FRANCIS, B.S., New York
SCHOCHET, GEORGE, Ph.G.,....Maryland	VAN METRE, JOHN LEE, A. B., West Virginia
SCHWARTZ, ALEC ROBERT, B.S., Pennsylvania	WALKER, RICHARD CHARLES Pennsylvania
SCHWARTZ, PAUL, Ph.G.,.....Maryland	WEISMAN, SAMUEL, Ph.G.,....Maryland
SCOLES, PETER SERAFINO....New Jersey	WIT, MAURICE CARL A.B.,....New York
	WOLBERT, FRANK OLAF.....Maryland
	ZAGER, SAUL.....New Jersey
	ZIMMEEMAN, FRED.....New York

*Did not complete the year.

GENERAL SUMMARY OF STUDENTS ATTENDING THE UNIVERSITY OF MARYLAND

SESSION OF 1929-1930

College of Agriculture.....	154
College of Arts and Sciences.....	624
School of Dentistry.....	349
College of Education.....	136
Extension	175
College of Engineering.....	275
Extension	281
Graduate School.....	135
College of Home Economics.....	76
School of Law.....	157
School of Medicine.....	419
School of Nursing.....	104
School of Pharmacy.....	359
Summer School, 1928, College Park.....	721
<hr/>	
Total	3,965
Duplications	138
<hr/>	
Net Total.....	3,827

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THE UNIVERSITY OF MARYLAND

SCHOOL OF NURSING

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GENERAL STATEMENT

The University of Maryland School for Nurses was established in the year 1889. Since that time it has been an integral part of the University Hospital, coming under the same government. The school is non-sectarian, the only religious services being morning prayers. The University Hospital is a general hospital containing about 250 beds. It is equipped to give young women a thorough course of instruction and practice in all phases of nursing, including experience in the operating room. The school offers the student nurse unusual advantages in its opportunity for varied experience and in its thorough curriculum taught by best qualified instructors and members of the Medical Staff of the University. The course of instruction covers a period of three years.

ADMISSION—Requirements: In order to become a candidate for admission to the Training School, application must be made in person or by letter, to the Superintendent of Nurses. An application by letter should be accompanied by a statement from a clergyman testifying to good moral character and from a physician certifying to sound health and unimpaired faculties. No person will be considered who is not in a good physical condition between the ages of 18 and 35. She must also show that she has a High School education or its equivalent. This is the minimum requirement, as women of superior education and culture are given preference provided they meet the requirements in other particulars.

The fitness of the applicant for the work and the propriety of dismissing or retaining her at the end of her term of probation, is left to the decision of the Superintendent of Nurses. Misconduct, disobedience, insubordination, inefficiency, or neglect of duty are causes for dismissal at any time by the Superintendent of Nurses, with the approval of the President of the University.

TIME: Students are admitted in February and October.

HOURS ON DUTY: During the probation term the students are on duty not more than six hours daily. During the Junior, Intermediate and Senior years the students are on eight-hour day duty, with six hours on Sunday and Holidays, and ten-hour night duty. The night duty periods are approximately five or six months during the three years.

SICKNESS: A physician is in attendance each day, and when ill, all students are cared for gratuitously. The time lost through illness in excess of two weeks during the three years must be made up. Should the authorities of the school decide that through the time lost the theoretical work has not been sufficiently covered to permit the student to continue in that year, it will be necessary for her to continue her work with the next class.

VACATION: Vacations are given between June and October. A period of three weeks is allowed the student at the completion of the first year and four weeks at the completion of the second year.

EXPENSE: An entrance fee of thirty dollars (\$30.00), payable on admission, is required of all students. This fee is not returnable. A student receives her board, lodging, and a reasonable amount of laundry from the date of entrance. During her period of probation she provides her own uniforms made in accordance with the hospital regulations. After being accepted as a student nurse, she wears the uniform furnished by the hospital, and in addition to this is paid five dollars (\$5.00) a month. Her personal expenses during the course of instruction and training will depend entirely upon her individual habits and tastes.

Five-Year Program

In addition to the regular three-year course of training the University offers a combined Academic and Nursing program leading to the degree of Bachelor of Science and a Diploma in Nursing.

The first two years of the course (or pre-hospital period), consisting of 68 semester hours, are spent in the College of Arts and Sciences of the University, during which period the student has an introduction to the general cultural subjects which are considered fundamental in any college training. At least the latter of these two years must be spent in residence at College Park in order that the student may have her share in the social and cultural activities of college life. The last three years are spent in the School of Nursing in Baltimore or in the Training School of University Hospital, which is affiliated with the School of Medicine of the University.

MERCY HOSPITAL SCHOOL OF NURSING

The Mercy Hospital School of Nursing was established in 1899 and incorporated in 1901. It has developed the art of the profession according to the high standard requisite to qualify for Registered Nurse.

The Mercy Hospital School of Nursing was organized and incorporated under the laws of the State of Maryland in 1899, and has operated successfully for a quarter of a century.

Requirements for Admission.

A candidate desiring to enter the School of Nursing should apply to the Superintendent of Nurses by letter or in person at least six weeks before the entrance date. It is preferred that she apply in person accompanied by her mother or guardian. If a personal interview is not possible, a written application may be submitted.

Age.

Candidates should be between the ages of eighteen and thirty-five years.

Physique.

Applicants should be of average height and good physique. Teeth and eyes should be attended to before entering the School, and tonsils removed if not in good condition. Every applicant is required to send in a certificate of health by her family physician. A physical examination is also made by the school physician during the preliminary period.

Education.

Applicants for admission should present at least high school certificate of graduation or its equivalent in educational values. The credits of preliminary education are fully accounted and the nurse who is the better qualified finds such a foundation more to her advantage as she progresses through the years of study.

Calendar.

Students are admitted September 1st and February 1st.

Length of Course.

The course of instruction covers three years. It is divided into a preliminary term of four months, a freshman term of eight months, a junior term of one year, and a senior term of one year.

Conditions of Acceptance.

The Superintendent of Nurses decides as to the fitness for the work and the propriety of retaining or dismissing a student at the end of the term of probation or during its course. She may also, with the approval of the faculty, terminate the connection of a student with the School in any justifiable instance. At the end of the preliminary period, if the student's health, general education, and natural aptitude prove satisfactory to the Director of the School and the Sister Superior, she shall be appointed for enrollment as a student nurse.

Expenses.

An admission fee of fifty dollars is required from all students. This covers the cost of uniforms and books required during the preliminary course.

Should the student for any reason leave the school before completing the course, this fee will not be returned, nor may she take with her any part of the equipment.

After four months' probation, candidates, if they possess the necessary qualifications, are admitted to the School of Nursing proper. They receive ten dollars per month to help defray incidental expenses. No compensation is given, the education received being considered sufficient return for service rendered. Board, laundry, etc., are furnished by the institution.

Four weeks before admission candidates should forward the fifty-dollar entrance fee, and measurements for uniforms and aprons, which will be in readiness upon their arrival. No orders will be considered until this fee is received.

THE FIVE-YEAR COURSE

Leading to B.S. Degree and Diploma of Graduate Nurse

The University of Maryland, in affiliation with the Mercy Hospital School of Nursing, offers a combined Academic and Nursing program.

The completion of this course entitles the student to the degree of Bachelor of Science from the University of Maryland, and to the diploma of the Mercy Hospital School of Nursing.

Graduate nurses who hold college degrees are greatly in demand, especially for positions in administration and teaching. This program consequently offers a distinct advantage.

Outline of Course.

Two years of this course (pre-nursing or post-nursing period) consisting of 70 semester hours are spent in the College of Arts and Sciences of the University, with the usual College vacations. At least the latter of these two years must be spent in residence at College Park in order that the student may have her share in the social and cultural activities of College life.

Requirements for Admission.

Students electing such a course must before entering the School of Nursing, satisfy the entrance requirements of the University of Maryland. Applicants must be personally adapted to professional nursing.

Fees and Other Expenses.

During the two years which the students spend at College Park they maintain themselves, and pay their own College fees. (See University of Maryland bulletin.)

Throughout the Nursing School Course the hospital provides without expense to the student maintenance and care during temporary illness.



VOL. XV

JULY, 1930

No. 1

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OF THE

SCHOOL *of* MEDICINE

UNIVERSITY OF MARYLAND



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BULLETIN

OF THE

SCHOOL OF MEDICINE

UNIVERSITY OF MARYLAND

VOL. XV

JULY, 1930

No. 1

TUBERCULIN IN OPHTHALMIC DISEASE*

By HOWARD M. BUBERT, M.D.†

and

FREDERICK A. HOLDEN, M.D.‡

BALTIMORE, MD.

TUBERCULIN IN OPHTHALMIC CONDITIONS.

In 1818 tuberculosis of the choroid was reported, and by 1915 tuberculosis of practically all of the tissues of the eye had been described.¹ According to Wilmer, marked changes in the attitude of ophthalmologists toward inflammations of ocular tissues have occurred in the past twenty-five years. One evidence of these changes has been the decreasing number of conditions designated as idiopathic. Many of this group were undoubtedly tuberculous cases.

Wilmer,² attempting to determine the frequency of ocular tuberculosis, quotes numerous writers; among these he refers to Wollf Eisner, who, in turn, quotes Groenow as saying that one case of ocular tuberculosis occurs in 4,600 eye patients; to Herrier, who gives one in 4,000; to Stephenson, who names one in 1,500, and to Milburn, who states the incidence is one in 200 ophthalmic patients.

*From the Protein and Eye Clinics of the University Hospital, Baltimore, Maryland

†University of Maryland, Class of 1920.

‡University of Maryland, Class of 1920.

This author expresses the opinion that every portion of the eye and its adnexæ may be the seat of tuberculosis; that the percentage of cases varies, due to the social status of the patients, the tissues of the eye involved, the acuteness of the disease, the precautions taken in excluding other sources of infection and the method of using tuberculin in diagnosis. Likewise, in his opinion, tuberculosis is a very important etiological factor in resistant lesions of the eye and its surrounding parts.

Tuberculosis has been found to be the etiological factor in a varying percentage of cases of choroiditis, irido-cyclitis, chorio-retinitis, scleritis, keratitis, uveitis, phlyctenular conjunctivitis, dacrocystitis, iritis, and optic nerve lesions. Clapp¹ quotes Von Hippel and J. Meller as stating that it is impossible to differentiate microscopically between tuberculous eye lesions and sympathetic ophthalmia, and he suggests their findings warrant very careful study in view of reported cures of sympathetic ophthalmia by the use of tuberculin.

Great difficulty is encountered in determining, from the reported cases, the results in ocular tuberculosis treated without tuberculin. Hartig, however, according to Woods and Rones,³ presents an exception. As a control to his tuberculin treated patients he withheld tuberculin from 14 other patients with ocular tuberculosis, with the result that not one of them was healed, one patient showed some improvement, while the remainder (93%) were unimproved. In contrast to this group, the treatment of the 38 patients with tuberculin resulted in 26.3% being healed, 42.0% being improved and 31.0% remaining unimproved.

The sponsors of tuberculin therapy have been compelled, not only to prove it to be a valuable therapeutic agent in ocular tuberculosis, but also to overcome other handicaps tending to make the profession hesitate in adopting it for this purpose. King⁴ has enumerated some of these difficulties. One of the outstanding of these is that since tuberculin is not generally employed by the internists in the treatment of pulmonary tuberculosis, its use is likely to be opposed by the family physician when it is suggested for any purpose. The basis for such opposition is that rest, hygiene and dietetic measures are without danger in the treatment of tuberculosis in contrast to the unanimously admitted possible danger of treatment with tuberculin when the latter is improperly used.

Another is that he feels many physicians believe that decided pulmonary tuberculosis must be present to warrant the diagnosis of ocular tuberculosis. The danger from the use of tuberculin applies peculiarly to eye conditions in which a minute destruction of tissue at the macula may produce loss of function out of all proportion to that produced by a similar mishap in another organ.

UNFAVORABLE REPORTS IN OPHTHALMIC THERAPY

Derby and Carvill,⁵ observing a series of cases over a period of years, concluded that tuberculin therapy is practically of no value. They still use tuberculin in cautious doses, but principally because of the mental effect upon the patient, who feels that something is being done for him.

Calhoun, in discussing the paper of Woods and Rones,³ after explaining that his experience with ocular tuberculosis was none too large, states, that in lesions involving the posterior segment, especially those of the macular region and retinal vessels, the diagnostic doses of tuberculin are contra-indicated, for the reason that fresh exudate and hemorrhages into the retina are known to occur with disastrous results. He also cites a case in which a stout healthy female, with what was clinically a solitary tubercle of the iris, had a sharp local, focal and general reaction to 0.20 mgm. of Koch's old tuberculin. Immediately the question of dosage arises; was this an initial test dose, as his remarks would indicate, because, if so, 0.20 mgm. seems to be dangerously large, and should not have been used initially, according to our standards.

Hess and Gilbert are quoted by King as being quite pessimistic in their appraisal of the benefit derived from tuberculin therapy in ocular tuberculosis. This author also quotes Igersheimer as concluding, from a study of the material of David, von Hippel and Schieck, obtained from the Gottenger Clinic, that specific therapy is of no value. Rollet and Collrat, according to King,⁴ challenge the favorable reports upon specific treatment, stating spontaneous cures are not taken into consideration.

FAVORABLE REPORTS UPON TUBERCULIN THERAPY

Wilmer² states that a strongly positive skin reaction to a minute dose of tuberculin justifies one in assuming the tuberculous nature of the eye lesion, and local and focal reactions are not necessary.

He also says that tuberculin therapy, when given in small increasing doses over a long period, often changes a resistant eye lesion into a yielding one, thus helping a previously hopeless patient.

Woods and Rones,³ in the conclusion of their article say, "it is true that without tuberculin, while the attacks of the disease are somewhat self-limited, recurrences are constant rather than unusual, and the clinical prognosis is usually definitely bad. Under tuberculin therapy a more rapid limitation of the attack may be expected, recurrences becoming rare rather than the rule, and apparent complete healing is observed in a large number of patients." Later in the article, results are given as 45% healed, 45% definitely improved and 10% unimproved, and their final statement is, "These observations indicate tuberculin therapy to be of real value in the treatment of ocular tuberculosis."

Meller and Novak, quoting from King's article⁴, after surveying the large amount of material of the Vienna Clinic, insist upon the use of tuberculin in the therapy of ocular tuberculosis. Professor Neuman, of Vienna, quoted by King,⁴ states in a paper upon this subject, "I have presented only certain, definite types of tuberculosis in which, in the light of my twenty years' experience, tuberculin is pre-eminently effective, so pre-eminently that upon the basis of this long experience, I should like to directly characterize a failure to give it a trial, in the above-mentioned types of tuberculosis, as culpable negligence." It may be explained that in his paper he had classified tuberculosis in general into groups in which he felt tuberculin was effective therapeutically. One of these groups included ocular tuberculosis.

King,⁴ in closing his article, in which he has thoroughly studied the literature for and against tuberculin, concludes among other things, "The preponderance of evidence indicates that tuberculin is of great value in the treatment of ocular tuberculosis."

Lack of space precludes the citing of more authorities. We believe, however, the foregoing is sufficient to prove that tuberculin should play a great part in the treatment of resistant eye lesions, especially if these can be definitely diagnosed as tuberculous.

CRITERION OF SUCCESSFUL THERAPY

Pel, as quoted by King,⁴ suggests the following conditions as a criterion of success with tuberculin therapy in pulmonary tubercu-

losis, and King feels the same demands may be made upon it in ocular tuberculosis.

"1. If no improvement in the patient's condition shall have occurred under adequate hygienic, dietetic treatment in the proper environment, then specific therapy is to be undertaken.

"2. If an improvement in the condition is immediately apparent, the success of tuberculin therapy, so far as the immediate condition is concerned, can be regarded as proven.

"The final value of tuberculin can be determined only by the study of many cases over a long period of years. Unfortunately, as stated by Derby and Carvill, these reports are not as yet as numerous as they should be."

METHOD OF HEALING

The tuberculin reaction is variously termed anaphylactic and allergic throughout the literature. There are many objections to considering it thus, as brought out by Coca⁶ and Rondoni⁷. The probabilities are, the reaction is entirely dissimilar from these and is an individual and different phenomenon. An adequate discussion of the mechanism involved is impossible in this paper. Until the nature of the phenomenon is better understood, it may be considered of value in treatment because the injections act as stimuli, progressively augmenting the defensive reactions of the patient.

DANGERS OF TUBERCULIN

Two possible dangers are usually cited by the opponents of tuberculin therapy in ocular tuberculosis: first, the destruction of the tissues of the eye, in the event of a focal reaction; secondly, activation of a latent pulmonary tuberculosis.

The first may be avoided by careful dosage, and by accepting the skin reaction as diagnostic, rather than demanding a focal reaction.

The second possibility does not seem as important as one might think if the modern conception of stages of tuberculosis is accepted. To quote Aschoff,⁸ "In other cases the metastasizing process comes to a halt (in contradistinction to the fatal ones mentioned before, by him) but the local infection, the so-called organ phthisis (including ocular cases) goes on. Thus develops the picture of the brain tubercle, the chronic bone, joint and urogenital phthisis. This has also been named the tertiary stage of phthisis. It is a very striking

fact, however, that just in these very cases the lungs remain remarkably unaffected for relatively long periods, or altogether free of phthisical symptoms."

Therefore, we feel that while the dangers of injudicious tuberculin therapy, in ocular tuberculosis, are real, yet they have been over-emphasized, and may be avoided if care and judgment are used in selection, testing and treatment of cases.

SELECTION OF CASES

As stated earlier in this article, the frequency of tuberculosis as a cause of chronic eye conditions of obscure origin, is just being realized. Consequently, it is our opinion, that unless there is proof to the contrary, tuberculosis may be accepted as the etiological agent in this type of case, in the absence of any known cause. Usually, every possible step has been taken, so that tuberculin therapy is a last resort in a case unresponsive to other types of therapy. Hence, your position is one of all to gain and nothing to lose.

Needless to say, evidences of pulmonary tuberculosis must be looked for, and, in the event an active lesion is present in the lungs, the tuberculin therapy should be withheld, or administered with even greater care.

METHODS OF TESTING

Tests may be made either by subcutaneous or by intracutaneous injection of some form of tuberculin, whether Old Tuberculin, or some variation as Tonneissen's⁹ te be protein, or Ertuban². Results also are judged differently, some men demanding a focal reaction in the ocular lesion, while others consider the skin reaction sufficiently diagnostic and, in addition, devoid of the very real danger attendant upon the former response.

In our work intradermal testing with Old Tuberculin has been used exclusively. Reliance has been placed upon the skin reaction and focal reactions have been studiously avoided by careful use of small amounts. In the light of our experience we feel the local reaction is of definite diagnostic value, and by accepting it as such the possibility of harm is reduced to a minimum.

Proof of the value of this method is ably presented by Wilmer². The details of testing are as follows: Cleanse the forearm with alcohol, inject 0.1cc. of glycerin broth intradermally, as a control.

Above this, far enough away to avoid confusion, 0.1cc. of 1-100,000 solution of Old Tuberculin is likewise injected intradermally representing, of course, 0.001 mgm. of Old Tuberculin. (O. T.)

After forty-eight hours the patient is again seen and the arm inspected. In the event of a positive reaction, questioning will usually elicit the information that a varying degree of discomfort was experienced at the point of injection of the tuberculin but not of the control; inspection will reveal a red circular area varying in size from 5-6 mm. in diameter to 15-16 mm. in diameter. Should the result be negative, 1-10,000 solutions of O. T. and control solution are used, followed in turn, in the event of a negative result, by the strongest concentration utilized, 1-1000 representing 0.1 mgm. of tuberculin to 0.1cc. Should this be negative, the patient is not considered as being unduly sensitive to tuberculin.

RETESTING

Ocular tuberculosis has, in common with the infection in any organ or tissue, the characteristics of chronicity, and a tendency to recurrence. Consequently, while we feel tuberculin therapy is of great value, these factors are still operative even when it is used and must be kept in mind. Our plan, therefore, includes repetition periodically, of the intradermal tests with Old Tuberculin, as suggested by Woods and Rones³. We allow, however, an interval of six months to elapse between completion of a therapeutic course, and retesting instead of the four months' interval they suggest.

In the event of the return of a positive reaction, even though no eye symptoms have recurred, another therapeutic course of tuberculin is given. When this is necessary, we find the doses can be increased more rapidly than during the first course, thus materially decreasing the time necessary to complete treatment.

We agree with Woods and Rones, that its probable recurrences may be avoided by following this routine.

METHODS OF TREATMENT

Different workers advocate different methods of treating ocular tuberculosis, with substances other than tuberculin broth filtrate. These include subcutaneous injections of milk, partial antigens, kry-salgan, and other substances.

Tuberculin is also given in different forms and in different scales

of doses by different workers.⁹ The two main plans are: first, the administration of relatively large amounts with the intention of producing focal, local or general reactions; and secondly, the cautious administration of small doses, studiously avoiding a reaction of any kind, particularly focal or general ones. Occasionally slight local reactions are practically impossible to escape with any plan of treatment.

AUTHORS' METHOD

The latter conception is, we feel, the better one, and is the one subscribed to by Wilmer, Woods and Rones, King and Derby and Carvill.

The details of the procedure used by us are given by Woods and Rones in their article, but briefly, are as follows: Broth filtrate (B. F.) of tubercle bacilli, is prepared in a series of dilutions, with sterile salt solution, 1-10, 1-100 and so on up to 1-100,000. In this series of dilutions, number one represents pure B. F. and is said to contain 1000 mgm. per 100 cc. Number nine, the highest dilution, contains 0.00001 mgm. of B. F. per cc. In cases moderately sensitive, to the test dose of Old Tuberculin, an initial therapeutic injection of 0.1 cc., number 8, B. F., is given, representing 0.00001 mgm. of the active principle. Those patients showing marked reactions upon testing with high dilutions of O. T. are given an initial therapeutic dose of 0.1 cc. of number 9, B. F. or 0.000001 mgm. of the filtrate. The therapeutic doses of B. F. are given subcutaneously or intramuscularly as opposed to the intradermal route used in testing.

The following complete protocol is taken from Woods' and Rones' article:

PROTOCOL

Treatment of Mr. T.—with Tuberculin—Injections given twice each week, subcutaneously in the deltoid muscle, with a tuberculin syringe.

Solution—9 (1-100,000 of a mg. per cc.)

Dose— 1—0.1 cc.

2—0.2 cc.

3—0.35 cc.

4—0.50 cc.

5—0.7 cc.

6—0.9 cc.

Solution—8 (1-10,000 of a mg. per cc.)

Dose— 7—0.1 cc.

8—0.2 cc.

9—0.35 cc.

10—0.5 cc.

11—0.7 cc.

12—0.9 cc.

Solution—7 (1-1000 of a mg. per cc.)

Dose—13—0.1 cc.

14—0.2 cc.

15—0.35 cc.

16—0.5 cc.

17—0.7 cc.

18—0.9 cc.

Solution—6 (1-100 of a mg. per cc.)

Dose—19—0.1 cc.

20—0.2 cc.

21—0.35 cc.

22—0.5 cc.

23—0.7 cc.

24—0.9 cc.

Solution—5 (1-10 of a mg. per cc.)

Dose—25—0.1 cc.

26—0.2 cc.

27—0.3 cc.

28—0.4 cc.

29—0.5 cc.

30—0.6 cc.

31—0.7 cc.

32—0.8 cc.

33—0.9 cc.

Solution—4 (1 mg. per cc.)

Dose—34—0.1 cc. Begin treatments once each week.

35—0.2 cc.

36—0.3 cc.

37—0.4 cc.

38—0.5 cc.

39—0.6 cc.

40—0.7 cc.

41—0.8 cc.

42—0.9 cc.

Solution—3 (10 mg. per cc.)

Dose—43—0.1 cc.

44—0.2 cc.

45—0.3 cc.

46—0.4 cc.

47—0.5 cc.

48—0.6 cc.

49—0.7 cc.

50—0.8 cc.

51—0.9 cc.

Solution—2 (100 mg. per cc.)

Dose—52—0.1 cc.

53—0.2 cc.

54—0.3 cc.

55—0.4 cc.

56—0.5 cc.

57—0.6 cc.

58—0.7 cc.

59—0.8 cc.

60—0.9 cc.

SUPPLEMENTARY TREATMENT

Other forms of therapy, such as nourishing food, heliotherapy, rest and fresh air are used in addition to the tuberculin. They are as indispensable in tuberculin treated cases as in those treated without tuberculin.

LOCAL TREATMENT

The local treatment in ocular tuberculosis consists in treating

symptoms as they arise. When the choroid and retina are involved no local treatment is necessary. Phlyctenular kerato-conjunctivitis calls for the use of atropine to prevent iritis. Atropine is also used in all cases of iritis and of keratitis for the prevention of synechia and the relief of pain. Hot applications also give relief in the inflammatory processes. The above treatment is carried on in conjunction with tuberculin therapy.

RESULTS

Improvement obtained divides itself into two phases, immediate and delayed. The former is remarkable many times. A patient, suffering from severe photophobia and ocular pain may, after receiving only the intradermal tests, state he is much better, and almost invariably, a few therapeutic doses of B. F. control subjective symptoms to a really startling degree. This initial improvement frequently causes some of the physicians in our eye clinic, unfamiliar with tuberculin therapy and the immediate improvement obtained, to tell the patient that no further treatment is necessary because the eye has healed. Derby and Carvill suggest that the acute exacerbations of ocular tuberculosis are self-limited, and these apparent examples of improvement are simply coincidences. Anyone with experience in handling even a few of these cases, will at once appreciate this is an entirely inadequate explanation, and that tuberculin does exert this favorable influence. To our minds, this form of therapy is justified by this rapid, immediate, improvement alone, even without its beneficial effect upon the ultimate prognosis.

Our clinic has not been in operation a sufficient length of time for us to discuss the ultimate results obtained therein. Based upon the experience of other workers, previously quoted in this article, as Woods and Rones,³ we feel tuberculin therapy should markedly increase the possibility of cure, or, at least, decrease the frequency and severity of recurrences so constantly encountered in this form of ocular disease, without the use of this form of treatment.

SUMMARY

Tuberculosis is now considered by the vast majority of observers as a very important cause of disease of all the structures of the eye. Especially is this true in chronic conditions that do not respond to therapy aimed at other etiological causes. Treatment of ocular

tuberculosis includes all the general hygienic measures to be used in other forms of phthisis and heliotherapy as well. It is difficult to evaluate from the literature the results obtained with these methods alone.

Tuberculin has been used periodically and increasingly in these conditions. It has had to overcome many handicaps, such as prejudice, the conviction upon the part of many that ocular tuberculosis is a rare condition, and the real danger of improper methods of use. The literature contains many unfavorable reports, but also contains probably a greater number of reports favoring its use.

The possible dangers of this therapy are discussed and an attempt made to show that certain of them have been over emphasized and the others may be avoided. A method of selection of cases is suggested.

Different plans of treatment and testing are discussed and our plan given in some detail. The necessity for retesting and re-treatments in certain cases is presented.

Beneficial results are immediate and ultimate. The former have been, in our experience, most dramatic. The latter, based upon the experience of others, seem also of great value.

CONCLUSION

Tuberculin therapy is of definite value in ocular tuberculosis if care is exercised in testing and treatment.

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CONSIDERATION OF THE VENEREAL DISEASE IN MEDICAL PRACTICE*†

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The past two decades have witnessed a most revolutionary trend regarding the venereal disease problem. Although warfare has been waged against these maladies for several centuries, it has only been the unprecedented progress made in the field of preventive medicine, in the diagnosis and therapy of syphilis, in the broad subject of social hygiene, and also, what may be termed as the exciting factor, the World War, that has given this problem an entirely different perspective and prompted renewed impetus for its more hopeful and effective solution. In the successful administration of any movement that concerns the public health, a wholehearted public co-operation becomes imperative. Such co-operation, while attainable only through the process of persistent education and enlightenment, often calls for radical changes in our social customs. These, not infrequently, are fraught with difficulty, and while in the instance of the topic in question much has been written from its sociological and medical angle, it is a subject that demands constant agitation lest its interest relapse into quiescence and indifference.

BRIEF RESUMÉ OF THE NATIONAL CONTROL MOVEMENT

Most conspicuous, among the more radical changes, has been the phenomenal progress made, primarily, to attack these maladies at their source, recognizing this to be the most logical method toward their ultimate control. To this end, in the United States, there has been considerable activity. During the ten years, since the inception of the National Control Movement, the problem has been attacked from almost every conceivable angle. So closely are these preventive efforts and measures related to the clinical side of the question, that a short recapitulation of the major activities should be of interest.

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Whereas the parasitic nature of gonorrhea, syphilis and chancroid has long been known, and their epidemiological nature well realized, nevertheless their inclusion among the other communicable diseases as a legitimate public health project has been hitherto well nigh impossible. The situation was simply the question of reconciling theory and practice, to which end the winning over of public opinion in support of a rational campaign becomes the initial requirement. Whatever damaging influences the World War may have had, like every war, in shattering moral inhibitions and ethical standards of youth, thereby predisposing to a prolific spread of the venereal diseases, a compensatory reaction was reflected in the rapid and enlightened change of public sentiment, which culminated in the National control and public health attack against these diseases in civilian population. Only recently the Surgeon General of the United States remarked that¹, "Never before has the public been enlightened more rapidly concerning any health problem, nor has more progress been made in a similar period of time in directing the forces of prevention against any group of diseases. On the other hand, it must be acknowledged that no problem which heretofore has engaged the forces of prevention offers greater obstacles to success than the venereal diseases." In 1911 the Public Health Service desired to publish a simple pamphlet containing information concerning the venereal diseases, which pamphlet was to be distributed to patients in marine hospitals. When it was submitted for publication, however, officials in the Treasury Department returned it with the statement that it contained matter which was indecent and unfit for the Government to print. In less than ten years, the change in public sentiment permitted the Government to spend millions of dollars a year broadcasting information far more frank in the treatment of the subject than the pamphlet which had been rejected. Since investigation has been made respectable and open discussion sanctioned, the alarming prevalence of these maladies, throughout the country, has thereby been revealed, and their place as potent contributors in the etiological role of many chronic and fatal illnesses demonstrated; in consequence, their position together from a social, public health and medical standpoint assumes a major subject for consideration.

Perhaps the most energetic efforts in the control movement have been directed along the lines of social reform and education, in an

attempt to regulate human conduct and behavior towards accepted ethical standards, recognizing that in this way you strike at the very basic cause, sexual promiscuity, for the spread of the venereal diseases. To this end, in the United States, there has been great activity. Variety of laws have been enacted primarily to eliminate, as far as possible, all the agencies and institutions which foster illicit and promiscuous intercourse, or contribute otherwise to the abuse of social privileges. Likewise, many laws have been enacted for the betterment of social and economic conditions which indirectly influence the prevalence of these maladies. Hardly a phase of modern life has been untouched which does not in one way or another have its bearing upon the problem of venereal disease control. Campaigns of education, including sex hygiene in schools, literature, health exhibits, moving pictures, parental talks and efforts towards conveying reliable information of the venereal diseases to reach the average citizen have formed part of the general movement.

The major Federal medical activities were, in the main, the creation of the United States Interdepartmental Social Hygiene Board in 1918, simultaneously with the Division of Venereal Disease as a special division of the Public Health Service, these representing the initial Federal administrative machinery for promoting scientific research for better medical methods relative to diagnosing, treating and means of preventing the venereal diseases. The functions of the former were essentially directed towards scientific research in the study of social, medical, educational, and protective measures and for medical discoveries for their treatment and control. Through the Division of Scientific Research, during the four years of its function, large sums were appropriated to twenty-three American institutions to carry out extensive laboratory experimentation and clinical investigation.

The work of the Division of Venereal Diseases of the Public Health Service has developed mainly along the line of cooperative work with the State Boards of Health for the prevention and control of venereal diseases within the States. In the beginning of the control movement, when state-aid federal subsidies were available, this division assumed the leading responsibility in the enactment of uniform legislation and building up specific, model programs of control activities throughout the country. A network of

clinics has been established in all parts of the country, in which standard methods for accurate diagnosis and treatment are employed, where not only can indigent patients receive modern scientific treatment without charge or for a nominal fee, but attempts are made to encourage the patronage of the larger middle classes as well. In many instances an efficient follow-up system is attached. Aside from the municipal public health laboratories, many of these clinics provide laboratory facilities to assist the local physicians in their diagnosis. This departure from the old, mediocre hospital dispensary stands out as one of the most progressive steps in the medical attack against the venereal disease problem. As a contrast to conditions that had existed previous to the war, it may be of interest to cite briefly that in 1913 out of 227 cities surveyed only four had free venereal disease clinics and three provided hospital care for dangerous cases². Out of the entire group only 46 provided free laboratory diagnostic facilities for syphilis. Ten years later, 82 per cent had free laboratory diagnostic facilities; 100 per cent provide free clinical treatment, in many instances to the full extent necessary; 65 per cent provide hospital or other facilities for isolation of dangerous cases; 79 per cent recognize the venereal diseases as one of the major subjects in their public health educational programs. Almost every city capable of supporting a full-time health officer and undertaking a well-rounded public health program has, as an integral part of its communicable disease plan, measures directed toward the control of venereal disease.

Simultaneously with these activities the general conference on world problems of health conservation was called by the League of Red Cross Societies Committee at Cannes, France, in which it was agreed that the combating of the venereal diseases was one of the great outstanding problems of the present century, and recommended the organization of practical programs for carrying out approved measures. The All-American Conference, held in Washington, December, 1920, under the auspices of the Social Hygiene Association was the first of the regional conferences, and brought together recognized authorities of their respective fields. This conference was limited to discussion of the venereal diseases as the most urgent of the disease-prevention campaigns to be promoted by this method. Resolutions were made covering in detail the following questions:

surgery, biology, psychology and sociology as correlated branches contributing to a better understanding of this complex health problem.

The American Social Hygiene Association and many national and independent volunteer agencies have contributed and co-operated in numerous ways toward this campaign, now approximately in its tenth year of activity. Although this is a rather brief resumé, it serves to illustrate the national and local forces and measures that have been applied in the general control movement.

Medical research and laboratory questions.

Diagnosis and treatment of syphilis.

Gonorrhea in the male and female.

Public health and administrative questions.

Clinic and hospital questions.

Statistics, public information and education.

Law enforcement measures.

Protective social measures.

Psychological and psychiatric questions.

Social service.

As part of the Industrial Progress of the Division, valuable work was accomplished with railroad surgeons and efforts made to eliminate syphilitics from responsible positions in railroad work, as studies revealed syphilis to be eight times as frequent among railroad men and their families than any other occupational group, and in several instances it was proven that wrecks were directly attributable to paresis of engineers.

The necessity of imparting knowledge of the latest progress made in the field of research and control methods, and to awaken the interest of public health officials, physicians, nurses and others interested in this work became imperative and recognized by the Division which, in co-operation with The Interdepartmental Social Hygiene Board and the American Social Hygiene Association, conducted the Institute on Venereal Diseases Control and Social Hygiene, held in Washington in 1920. A staff of instructors was organized comprising the ablest men and women in those subjects relating to the control of venereal disease, embracing medicine.

RECENT SURVEYS AND INVESTIGATIONS

One of the more recent schemes of investigation conducted by the United States Public Health Service in co-operation with the American Social Hygiene Association is the making of surveys in definite localities, either selecting one of the larger cities, or the territorial limits of several counties of a State in which one or more of the larger cities are located. The aim is to arrive at some basic figure that will give a semblance of accuracy regarding the prevalence rate among civilian population and serve as a criterion for future studies and comparison. The method consists of the one-day census, either by personal interview or by the sending of a questionnaire to every physician and other person licensed to treat the sick and to every clinic, hospital, and other institution in which venereal diseases might be treated in the territory under survey. The idea is to ascertain the actual number of cases of syphilis and gonorrhea under observation or active treatment on the designated census date, as well as to reveal such valuable information as the patronage rate of the physician versus the clinic, the percentage of physicians treating venereal diseases, the distribution of the various stages of the diseases as seen in private practice and clinic, the age and sex of patients, etc. Whereas sources of error may prevail, by reason of undiagnosed cases and those individuals resorting to self-treatment who escape reporting, the co-operation in these surveys was considered virtually 100 per cent, and for the present may be accepted as a fair criterion. In most of the localities that have been surveyed within the past few years it is interesting to note (see Table 1) that approximately fifty per cent of all physicians include venereal diseases in their practice, and that the patronage rate is decidedly in favor of private service, which was found to be seventy-five per cent over that of the public clinic. While the stages of the venereal diseases were subject to variation in different localities, as seen in private practice and the clinic, yet in most instances the incipient stages of both gonorrhea and syphilis predominate perceptibly in private practice. In St. Louis, for instance, the proportion of cases under treatment in private practice was shown to be about the same for early syphilis (89%), acute gonorrhea (89%), and chronic gonorrhea (87%). A much smaller proportion of late syphilis (62%) was under private care. In all

TABLE 1

LOCALITY	Per cent of cases seen by physicians	Per cent of cases seen in clinics or other institutions	Physicians (per cent) reporting one or more cases under their care	Osteopaths and chiropractors treating one or more cases	Clinics reporting one or more cases	Number of cases reported in the survey
DETROIT ^a	?	?	49	21	35	16,735
W. VA., KY., ILL., ARK. ^b (9 cities; 5 counties)	75	25	55	10	48	5,395
NEW YORK ^c	75	14.5	45	?	100	16,735
TENNESSEE ^d	69	31	46	?	48.5	11,346
ST. LOUIS AND VICINITY ^e	78	22	53.5	8.6	52.5	15,102
MISSISSIPPI ^e (16 counties)	88	12	61	8.6	21	4,202

From *Veneral Disease Information*, monthly publication by the Treasury Department, U. S. P. H. Service.

^aVol. VIII, No. 6, 1927.

^bVol. IX, No. 2, 1928.

^cVol. IX, No. 4, 1928.

^dVol. IX, No. 10, 1928.

^eVol. X, No. 5, 1929.

the surveys more cases of late syphilis were reported than the earlier stages of the disease, and the percentage of late syphilis predominated in the clinics. In several cities, it was noted, that as high as 97 per cent of males having acute gonorrhea were being treated in private practice.

A careful consideration of the data collected in these surveys and campaigns leads to the following conclusions:

Firstly: Up to the present, after ten years of the national movement in which the most energetic efforts have been made toward prevention and control, the fact yet remains that these activities seem to have had no appreciable effect in reducing the number of new infections.

Secondly: Whatever any individual impression of the trend may be, it is indisputable that these diseases remain prevalent in alarming proportions and continue to be potent contributors to human suffering, sterility, incapacity and death.

Thirdly: Although modern clinic facilities have been made readily available, being given free or at a moderate charge, and have thereby resulted in getting thousands of infected persons under scientific treatment, yet it is significant that medical services from private sources remain pre-eminently those of choice.

The vital responsibility of the clinician, therefore, becomes evident. Considering that private service remains that of popular preference, and that the majority of patients present the earlier stages of infection, when immediate and competent attention stands imperative, the conclusion is evident that the future of the venereal diseases will depend, in no small measure, upon the conscientious efforts and skillful attention given to this branch of medicine and upon the ability and experience of those who undertake its management.

It is almost proverbial that this has been one of the most abused and neglected branches, particularly in this country. The undesirable character of the work and its association with the moral question, have been conducive, in no small degree, toward prevailing incompetency and illegitimate practice. In the past, medical attention has been focused on the surgical complications and sequelæ of these maladies, creating thereby what may, perhaps, be termed a "medical mal-adjustment," to such an extent that the best efforts

have obviously been directed towards treating the wrong end of the disease.

However, as a result of the tremendous progress made in the fields of urology and syphilology, we are beginning to see greater recognition given to this important subdivision, viz, venerology. Such recognition is all the more valuable because the considerable developments in this field have demonstrated the imperative need of special qualifications and extensive practical training for the scientific management of these maladies. Closely associated with the specific infections are the numerous kindred conditions that find their pathological expression in the uro-genital region. Such conditions, in their clinical symptomatology, often intimately resemble those diseases specific in nature, which fact still remains a potent source of serious diagnostic and therapeutic error.

Let it be said that the initial requisite in dealing with any disease or condition that bear the semblance of being so-called "venereal," is early, accurate diagnosis based on combined clinical, serological and bacteriological evidence, primarily, to ascertain the possibility and nature of its infectiousness. This fact must be definitely determined in both gonorrhea and syphilis, in order to set a foundation upon which an intelligent and effective therapy can be based. In this respect the physician wields a powerful influence in disease prevention, as it is he upon whom hope and dependence is being placed by health officers and sanitarians, if not for the eradication of the venereal diseases, at least for the swinging of the pendulum towards their diminution.

In primary syphilis, particularly, is the efficacy of early treatment so great in carrying the patient from an active contagious state into a safe potential status, that it offers us a reliable means to bring the practical extinction of the disease within the bounds of possibility. The ubiquity and polymorphism of this disease have placed it in the unique position of forming an integral part of every specialized field of medicine. Whereas it may necessitate expert knowledge to treat it in its various protean stages, the clinicians, who hold the most effective key to the situation, are those who see it while in the primary, or venereal status. Strive as we may to avoid the issue, we are constantly confronted by the fact, at least in the present generation, that syphilis is in the main a venereal disease. Stokes,³ in speaking "On the Future of Syphilis," stresses

the point, ". . . that we should, as physicians, fasten our eyes upon the chancre and its immediate sequelæ, not upon Charcot joint, the aneurysmal bulge, or the pelvis full of spleen. . . . If all of us would turn to writing and thinking about chancres and their sequelæ, a generation or two might see the extinction of the disease." It may be again emphasized, therefore, that physicians should concentrate their diagnostic resources on all cutaneous lesions and ulcerations, especially when in the region of the genitalia, regard them with suspicion, ferret out with absolute precision those definitely syphilitic in nature and, at once, administer a course of antisyphilitic treatment in conformity with those generally considered best suited to bring about an ultimate cure. It is no exaggeration to say that delay of a few days in beginning treatment of primary syphilis may determine unfavorably the end results. After a definite diagnosis and a course of antisyphilitic treatment, the manner and plans of which, in all early cases, run more or less parallel; each patient, subsequently to this, becomes an individual problem for general serological study and further treatment, in order to avoid the possible tragic sequelæ incident to this disease. The clinician should be keenly alert to that false sense of security that our modern chemo-therapeutic measures have been known to develop. Syphilologists have repeatedly called attention to the danger of turning patients loose at the disappearance of visible lesions and a sero-negative test, following a course of several arsphenamines and bismuth, etc. What may serve as an illustration that bears out this fact are the variations of clinical results, as reported by Moore and Kemp,⁴ in 402 patients with early syphilis, of whom 42 had sero-negative primary, 61 sero-positive primary, and 299 early secondary syphilis. Only ten per cent of those patients, receiving eight or less doses of arsphenamine without mercury, were cured; when two courses of arsphenamine plus interim mercury were given, 37 per cent were cured; after three courses, 56 per cent, and after four or more courses, 78.8 per cent of probable cures were obtained. It has been our privilege to have had an unusually large number of cases presenting primary lesions with sero-negative reactions and our results bear out the conclusions of those here mentioned.

From the treatment viewpoint, of all the ambulatory maladies, as being the most vexatious, gonococcal urethritis stands out in the

lead. Whereas in syphilis, scientific researches have succeeded in discovering diagnostic tests and specific remedies that render quick control and sterilization possible, on the contrary, in the treatment of gonorrhea very little headway has been made. A practitioner, especially in a rural community, turning to the general literature for guidance will search in vain to find any uniform line of treatment and sooner or later be forced to resort to his own ingenuity.

The fact remains that treatment is still unsatisfactory, and no definite workable standard has been established, but it must not be inferred that progress has been altogether lacking. Improvements have been made towards modern systematic management, with individualization and rationalization rather than empiricism as the basic fundamentals. Every patient represents an individual problem from the very beginning of the infection. The best results are being gained through vigilance, tact and persistent observation. We have now a clearer understanding of the local effect of chemicals and their therapeutic limitations especially in the acutely inflamed urethra. We recognize that they owe their virtue not only to their direct bacteriocidal effect, but also to their indirect action in stimulating the natural tissue defenses and anti-body formation. We know that this latter function is checked when the urethra is devitalized. With a better understanding of these facts, and since science has not provided us with a specific that reaches and destroys the Neisserian organism, the alternative is to use, to the best advantage, those remedies we now have at our command. The relative merits of such remedies and their practical application can only come through the school of prolonged training and experience, plus the natural ability and acumen of the physician. The subtle peculiarities of man's local responsive powers to drugs varies considerably, even to the same drug when used repeatedly. It is, therefore, evident that whatever remedy is used, its dilution, frequency and method of administration must be governed entirely by the clinical behavior of the case which, not infrequently, requires close daily observation, the study of the patient's personal equation, urinary analysis, and repeated microscopical examinations of smears made from the urethra, prostatic secretion, etc. In acute infections especially, is gentleness advised since the urethra resents trauma. As the case tends to become subacute, with the disappearance of inflammatory symptoms, more radical procedures are indicated. Skillful tech-

nique stands imperative especially where posterior urethral medication is indicated. Condemnations of chemical agents often are due more to their misuse and poor technique rather than to their intrinsic demerits. Whether the infection is seen in the acute or chronic form, the prime essential is the localization of the affected area by proper diagnostic methods, whether in the anterior or posterior urethra, the seminal vesicles, prostate, bladder; or, perhaps one or more of the little follicles opening from the urethra to ducts around the frenum.

Medical literature is replete with newer remedies and methods that have been recommended, and especially indicated in the complications and long-standing infections where the usual forms of treatment have failed. The more recent methods, deserving of special consideration, include diathermy and the intravenous and nonspecific protein therapy. The most contradictory views and claims have been heard regarding their respective merits. However, the original enthusiasm seems to have somewhat subsided. There are two important factors that cannot be overlooked when instituting any therapeutic measure for a gonococcal infection, viz, that the individual must be considered as well as the disease; for after all, we are usually dealing with a benign and ambulatory condition. Consequently, the use of any measure that tends to incapacitate, or produce much discomfort and pain is not always practical as a routine procedure, unless the end results are strikingly favorable and uniform. With the intravenous, and perhaps less so with the protein therapy, the reactions, as we know, may be quite distressing at times, and the corresponding results may be most disappointing. In diathermy, the economic factor prohibits its frequent use. The idea of killing all germs in a urethra by means of heat, in a single application, is an erroneous conception. In early and acute cases, these methods are absolutely contraindicated. We have had experience with all of them and find their greatest usefulness in cases where complications are either impending, or where incapacity has set in due, perhaps, to epididymitis or some other untoward development, and then only in selected cases where the study of the patient warrants their application.

There still remains for consideration that large number of cases presenting chronic urethral discharges, many instances non-specific in nature and which patients make up a considerable percentage in

a venereal clientele. The dictum that all urethral discharges must be regarded as potentially infectious, naturally calls for meticulous investigation, especially as regards specificity as has been heretofore mentioned. To effect a cure, the objective is, of course, to make the genito-urinary tract bacteriologically negative to gonococci and other pathological organisms, as well as to bring about the complete elimination of all clinical symptoms and the restoration of the mucous membrane to its original normal state. The fact that a post-gonorrheal urethral discharge, negative to gonococci, is often observed, brings up a contentious point in urology, namely, the possible existence of the organism in vivo with or without clinical manifestations. The clinician with a limited experience and without adequate laboratory facilities should hesitate to be too quick and dogmatic in rendering an opinion in such questionable cases. He should rather seek counsel and advice from specialized sources, and avoid the possibility of, and responsibility for, disastrous individual, social and medico-legal consequences.

One of the many elements that adversely influences the success of a venereal practice is that we are dealing largely with an ambulatory class of patients, many of whom possess a jumble of ideas, are more or less self-opinionated and easily misled by advice of their associates. It is a well-known fact that a certain number drift away after a short period of treatment. This is notably seen in public clinics where attempts have been made to remedy this fault by the organization of the follow-up social service. In private practice the delinquents are usually fewer in number but conditions are bad enough. So much of the success and final results are dependent upon the earnest co-operation and assistance of the patient until the complete termination of the treatment and ultimate cure. In any lingering ambulatory disease this becomes a difficult task, especially where pain, discomfort and clinical manifestations have disappeared. In gonorrhea, where home medication and certain social restrictions form part of the treatment regime, and in syphilis where systematic and regular medical attention and observation are so imperative, the faithful co-operation of the patient is of vital importance, and any neglect may be responsible for relapsing symptoms or for further and deep-seated invasion of the infection. While we cannot compel all patients to adhere strictly to our advice nor endow the foolish with common sense, yet such

disadvantages may be overcome, in a great measure, through the confidence inspired by frequent personal contact, and the demonstration of our unflagging interest in the present and future welfare of the patient.

I have not attempted to outline any new treatment scheme, but rather to bring before you, within the purview of an essay, the broader and modern consideration of a subject which should never be permitted to sink into the background; and to impress the need for closer study, to encourage the adoption of higher standards, and to emphasize the necessity for conscientious practical training as being the most effective medical weapons against these devastating maladies. The closer we analyze this problem the more we realize the extent of its scope, and are better able to appreciate its formidable bearing in medicine and civilization.

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JOHN ARCHER, M.B.
THE FIRST MEDICAL GRADUATE IN AMERICA.*

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The first medical college in America was founded in Philadelphia in 1765 and was called the College of Medicine of Philadelphia, which subsequently became the Medical Department of the University of Pennsylvania. Among those who entered its first class was John Archer, of Harford County, Maryland, who had been a private student of Dr. John Morgan, one of the founders of the college. On June 21, 1768, the degree of Batchelor of Medicine was conferred on him, along with nine other applicants. One of the candidates for the degree was Jonathan Potts, an Englishman, through whom the Faculty wished to show its respect for the mother country by granting him their first diploma. When this became known to the prospective graduates it caused serious protest and a threat to proceed to the College of New Jersey, at Princeton, and to secure their diplomas at that school. This caused the Faculty of the Medical College to change its mind and to allow the candidates to arrange the order of their graduation as they saw fit. They chose the alphabetical plan and John Archer was the first to receive a medical diploma in the English colonies of America. This identical parchment is now a most valued possession of the Medical and Chirurgical Faculty of Maryland, the gift of the late Dr. George W. Archer, of Emmorton, Harford County, Maryland, a grandson of the subject of this essay.

John Archer was the son of Thomas Archer, a descendant of an English family that had settled in the north of Ireland, who emigrated to America and located in Harford County, where his son John was born on May 5, 1741. His mother, Elizabeth Stevenson Archer, was also of an English family that had settled in the north of Ireland. Of the five children of the family four died in infancy, and John alone survived the epidemic that caused their deaths, and from him all the Archers of Maryland have descended; and a Doctor

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Archer has been practicing in Harford County from 1769 to the present time.

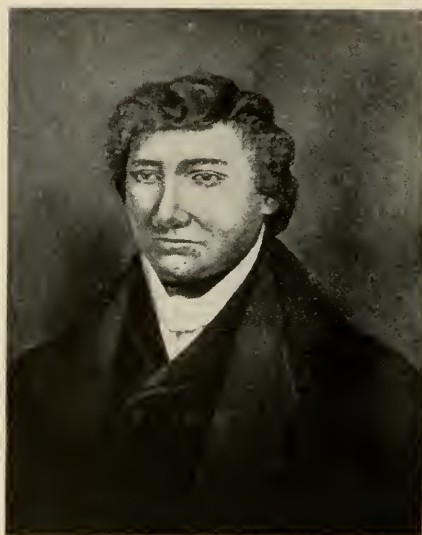
John Archer attended the West Nottingham Academy in Cecil County, a school which has continued its useful career until now. At this school was another pupil with whom he formed a close intimacy, Benjamin Rush, subsequently a distinguished physician and a signer of the Declaration of Independence. From this school he went to Princeton College where he received the degree of A.B. in 1760 and three years later that of A.M. Following his graduation he studied for the Presbyterian ministry and offered himself for examination before the Presbytery, but after two trials and the delivery of a specimen sermon, he was advised that "We cannot encourage him to prosecute his trials for the Gospel ministry any further." Being thus rebuffed in theology, he turned his attention to medicine, and in the spring of 1765 he became a pupil of Dr. John Morgan of Philadelphia and in November of that year entered the newly founded College of Medicine. Drs. Morgan and Shippen were the founders of the College and Archer's instruction was chiefly received from them. In February 1767, he relates the case of a "monster lately born in Charles Town, (Cecil County, Maryland) in the shape of two negro children in one. They have two heads, four arms and four legs distinctly and regularly formed; they are united from the shoulders to a little below the navels and lie in each other's arms, each having its arm under the other's head. It has been opened and the bowels are distinct and separate, as in two infants ought to be. One of them presented near half an hour to the world before the other and was alive at its first appearance. The midwife gave up the delivery, which was afterwards executed by the owner of the wench, who himself understood nothing of the business."

In the summer of 1767 he established himself in practice in New Castle County, Delaware and appears to have continued his professional services in that section for two years. He was fairly successful in his efforts, as during this period he attended 212 families and collected about \$1,000 for his work.

Returning to Philadelphia, he was graduated *first*, at the *first* commencement of the *first* medical school in America, on June 21st, 1768, and, *mirabile dictu*, his diploma is still in existence. The following is the official order of the graduation of this first class: John

Archer; Benjamin Cowell; Samuel Diffield; Jonathan Potts; Jonathan Elmet; Humphrey Fullerton; David Jackson; John Lawrence; James Tilton; and Nicholas Way.

In July, 1769, he returned to his native county in Maryland, where



JOHN ARCHER
1741-1810

he continued to practice his profession for nearly forty years. About this time the ominous rumblings of the war for independence began to be heard and Dr. Archer promptly took a prominent part in the struggle for liberty. In addition to being a member of the first local Revolutionary Committee in 1774, he raised the first militia company in the county and was commissioned its captain and drilled it regularly, though forced to use a speaking-trumpet, as his voice had become a hoarse whisper, owing to a throat disease, and in January, 1776, he was commissioned a Major; but as far as I am aware he never saw active service during the war. Later in the same year he was elected a member of the convention which framed the Constitution of Maryland and the Bill of Rights. He was also one of the Commissioners of Peace for Harford County, who formed the County Court; which office he held for thirteen years. He was

also one of the Judges of the Orphan's Court. Along with these duties he practiced his profession in his native county, as well as in contiguous portions of Maryland and Pennsylvania, and as in this section the hills are steep and the roads were doubtless bad, and the automobile and airplane were inventions of the far distant future, he must have pursued his calling with difficulty and with hard labor. However, his reputation became so widely extended that students from far and near resorted to him for training and after an apprenticeship would be entrusted with the care of the less serious cases and this would relieve him of much of the burden of his work.

He was married in October, 1766, while still a student, to Miss Catherine Harris, the daughter of Thomas Harris, who was a member of the family that founded Harrisburg, Pennsylvania. This Thomas Harris died in 1801, having reached more than 100 years of age and having lived in three centuries. From this union ten children resulted; four of whom died in infancy. Six sons survived and five of these chose medicine as their vocation. The youngest one of these died while still a student, but the others attended lectures at the University of Pennsylvania. The eldest of these was Thomas Archer, born 1768, in Harford County, and died in 1821. He did not receive a degree but practiced in his native county until his death. His brother, Robert Harris Archer, was born in 1775 and died in 1857, in a green old age. He also did not take a degree in medicine. After living in several different localities, he finally settled in Harford County and was a prominent citizen in that section.

John Archer, Jr., was born in 1778 and died in 1830. He was the first member of the family to receive the degree of M.D., which was conferred on him in 1798. He was surgeon to the Maryland Militia in the War of 1812. He died in Baltimore.

James Archer was born in 1779 in Harford County and died in 1815. He also received the degree of Doctor of Medicine from the University of Pennsylvania in 1804, and after practicing some years in his native County, moved to Mississippi, where he died at an early age.

The youngest son, Stevenson Archer, did not follow in the footsteps of his father and brothers, but became a lawyer and Chief Justice of Maryland, was elected a member of Congress, and was

appointed Judge of Mississippi Territory, with Gubernatorial powers, by President Madison in 1817.

From these sons an extensive progeny has descended which has reflected honor on the name in medicine, law, and the army, not only in Maryland but also in many other states of the Union.

Dr. Archer inherited from his mother a home, in which he lived for some while, but having dreamed several times that the house had been struck by lightning and burned to the ground, he deserted this domicile and built another several hundred yards distant from the first and at a lower level. This house he named Medical Hall and he appears to have lived in it during the rest of his life. As his reputation became widely extended, students began to flock to him for medical training, and it is said that in 25 years at least 50 young men received a large part of their medical instruction from him. Near his residence he built a one story stone office, where he saw his patients, and where his students read and studied and compounded prescriptions. When they were farther advanced, they would accompany him on his rounds and receive practical clinical experience at the bedside, and, as has been said, eventually they would be assigned to treat certain cases on their own responsibility. In 1797 a group of his students were embodied to form a medical society, which was called the Harford Medical Society, the transactions of which are in the Library of the Medical and Chirurgical Faculty of Maryland, in Baltimore. This book is in manuscript and consists of papers read before the Society from April 1, 1797 to February 1, 1798. Whether it was discontinued on that date or whether later papers have been lost, I am unable to say. John Archer, M.B., was the President, and his son, Robert Harris Archer, Secretary, and the other members were John Archer, Jr., James Walker, James Archer, William Harris, George Washington Archer, and Thomas Bayer: while Thomas Archer is recorded as a corresponding member and Adam Clendenin must also be considered a member, though he is not named as such in the Transactions. Thomas Archer, the eldest brother, was 29 years of age, but he appears not to have taken an active part in the Society, while most of the other members were very young. Robert H. Archer was 22, James Walker 21, John Archer, Jr., was 19 and his brother James only 18, and it is probable that George Washington Archer was not more than 17, as he died while still a student aged 19 years.

William Harris was a nephew of Dr. Archer and lived at Sunbury, Pennsylvania, and he appears to have taken his degree from the University of Pennsylvania in 1812. Another person mentioned as a member is Thomas Bayer, of whom but little is known. He is said to have died in Tiffin, Ohio, in 1835.

While these essays are of but little value at the present time, they do indicate the therapeutic measures that were usually employed at that time and which these young men largely adopted as followers of "the celebrated Rush,"—"the Father of American Medicine." Robert Harris Archer, indeed, says, "My heart is ready to burst for want of words to express the overflowing of my gratitude to that Being who has contributed so largely towards ameliorating the conditions of man by lessening the general shock of his sufferings—even my thoughts are too poor to do justice to his abilities. Do not mistake me—my gratitude is not at present offered to the Supreme Ruler of the universe. 'Tis to a Being, who although his Genius and Usefulness might entitle him to the first rank among the Spiritual Servants of God, yet he is—a fellow mortal—your friend—my friend—the friend of all mankind." This was the same Benjamin Rush who was the school-mate of John Archer at the West Nottingham Academy in Cecil County, Maryland, and who was one of the signers of the Declaration of Independence, from Pennsylvania.

When we consider that these young men were scarcely more than boys and some of them had not attained their majority and perhaps none of them had received the degree of Doctor at that time, it is both remarkable and commendable that they should have founded a regular society for their mutual edification and instruction and it was undoubtedly done at the suggestion and with the encouragement of their patron, John Archer, M.B.; and when we remember that they had no instruments of precision, such as the clinical thermometer, the blood-pressure apparatus and other appliances of the present day and knew nothing of auscultation and percussion or of the microscopic or other methods of examination of the urine and other fluids of the body, it is not to be wondered that their diagnoses were faulty and their therapeutic measures in some cases actually dangerous. Robert H. Archer, the Secretary, says in the preface of the volume: "If the reader should obtain no improvement from a perusal of the succeeding pages, it is hoped the disappointment will not produce

declamation; a well-designed intention ought to shelter from the shafts of the satirical sneerer;" and so we shall let them rest in peace.

In 1797 John Archer, M.B., was chosen a Presidential Elector at large in the interest of Thomas Jefferson, who was inaugurated President of the United States on March 4th, of that year.

Another incident of importance to the medical profession was his participation in the founding of the Medical and Chirurgical Faculty of Maryland in January, 1799,—the State Medical Association,—which is in active and flourishing operation at this day. His son, Thomas Archer, was also a charter member of this Faculty. John Archer was a prominent member of the Faculty and served on its first Board of Examiners. In 1800 he was elected a member of Congress and was re-elected in 1802. While resident in Washington he was much sought in consultation by the local physicians, when they had obscure cases which had baffled their skill. He is said to have discovered that vaccination would favorably modify whooping cough and render it comparatively harmless. He also devised an apparatus for the treatment of fractures of the femur, which his grandson, George H. Archer, says was the same appliance that became famous as "Physic's modification of Desault's" apparatus.

After his term of service in Congress had expired, he resumed practice at his home in Harford County, but about this time his health began to fail and he complained that while at one time he could eat whatever he wished, he had now to select a diet that would agree with him. Notwithstanding these efforts, his activities began to decline and he suffered an attack of partial paralysis which compelled him to relinquish all professional work. He also suffered from an asthmatic condition which prevented him from lying down and he died suddenly while sitting in his easy chair, on September 28th, 1810, in the 70th year of his age. He was buried in the graveyard of the Presbyterian Church, at Churchville, in his native county.

That Dr. Archer was a well educated man is evident from the record of his examination before the Presbytery of New Castle, Delaware, which states, "he was also examined at some length in the Latin, Greek, and Hebrew languages, his own experience in religion

and on some points of divinity." He was not considered, however, to "have given satisfaction on some doctrinal points" and was told he had "such an incapacity to communicate his ideas on any subject that we cannot encourage him to prosecute his tryals for the Gospel Ministry any further." Notwithstanding this profound decision we find that through life he did communicate his ideas on many subjects with great force and to the satisfaction of his fellow citizens. It is, perhaps, fortunate that he did not succeed in becoming a minister since he became a distinguished practitioner of the healing art, a teacher of students of medicine, a patriot, a soldier, a member of Congress, and withal a Christian gentleman.

Dr. Archer was not a prolific writer, but several of his contributions to medical literature can be found in the Medical Repository of New York, 1797-1812, either written by himself or contributed by his sons. In the volume for 1810 he gives an account of two cases of double impregnation; one a white woman, the wife of a poor man, gave birth to twins, one white and the other black. She acknowledged that her husband after cohabiting with her, had left her bed early in the morning and while she was still in bed a negro man had entered her room and had obtained her permission to have intercourse with her, with the result stated. The next case is of similar character; a white man cohabited with a negro woman after she had had intercourse with her negro husband and she brought forth twins, one black and the other a mulatto.

He was also a successful obstetrician, and is declared by a writer to have been unsurpassed in judgment and in manual dexterity by any other accoucher who had gone before him. In the Medical Repository of 1810 he relates two cases of closure of the vaginal orifice by adhesion of the lesser labia. The first case which came under his care in 1793, was a negro woman about 39 years of age. She had been married to her first husband 15 years, who then declared she was no woman and deserted her. She subsequently remarried and became pregnant. When she fell into labor a midwife was called, who informed her mistress that there was no passage and therefore the child could not be born. Dr. Archer was sent for and on examination of the patient found the labia interna were so firmly united that the vaginal outlet was almost completely closed, leaving an opening not more than a quarter of an inch in diameter.

He immediately introduced a director between the labia and the os pubis and divided the bond with a bistoury. The head of the child at once progressed and was born in a very short time. The mother recovered completely and the doctor never heard of any more complaint. The next case which came under observation in 1795 was a young negro girl with the same condition as that described above, but the adhesions were not as firm and the labia were separated by forcible pressure, without the use of the knife. Following this the labor progressed satisfactorily to delivery. As intromission of the male organ was impossible in these cases, Dr. Archer was led to wonder how impregnation could have taken place and he concludes that when ejaculation occurred the uterus descended towards the vaginal orifice and by a process of suction the semen was drawn into the womb. I do not suppose he knew of the existence of mobile spermatozoids. He considered the conditions to have been the result of lack of care of the babies, while the negro mothers were at work in the corn fields, which caused such irritation and inflammation of the genitals that the vaginal orifice became practically closed.

His son, Dr. Thomas Archer, also relates "A singular case of difficult parturition, successfully treated," in volume 1, *Medical Repository*. He says "On May 9, 1797, I was called to attend a servant woman who had been in labor four days. I found the os uteri not dilated to more than the size of a cent. It formed a thick, rigid, cartilaginous ring, not yielding nor becoming softened by the pains. She was thirty years of age and had had a prolapsus uteri when she was fifteen years. This was her first child and she had had strong pains, but the intervals between them were long. She was of robust and strong constitution. She was bled to the amount of 18 ounces, laxatives and glysters were given, with oleaginous injections into the vagina as well as certain medicaments but without relief, the os would not yield. The doctor now left the patient and did not return until the evening of the next day. He found the same condition to exist, but the pains had forced the uterus partly through the vaginal orifice. It was evident that the child was dead and the death of the woman seemed to be imminent. He resolved to incise the cervix, which was done with a common spear-pointed lancet by the light of a candle, without the knowledge of the patient. Three incisions were made, one from the uterus leading towards

the urethra, one towards the perineum and the other towards the left labium. After the incisions were made, the delivery was almost instantaneous. The incisions caused no pain nor did any hemorrhage follow the use of the lancet. She made an uneventful recovery and was up and walking about her room in three weeks.

While he was said to be an expert surgeon, I know of no record of any surgical work that he had accomplished, but the report of the following case is at least interesting. In the Medical Repository of 1812, page 215, his son, Dr. John Archer, Jr., gives an account of "A case of extraordinary recovery from a wounded stomach, which occurred in the practice of the late Hon. John Archer, M. B." This record was found after the death of his father and was reproduced by his son. "In June, 1784, immediately after dinner, three men agreed to go and take up a runaway negro man, who was supposed to be in the gentleman's barn, where they were guests. One man was to go into the barn and search for him amongst the straw, another was placed at the door, and another stood a small distance off in the course the negro must go, if the others missed apprehending him. The first went into the barn and was attacked by the negro with a large knife, but avoided the stroke. The negro then made for the door and the man who was placed there let him pass, but the third man remained at his post and did not see the knife in the hand of the negro and when he came opposite to him he drove the knife into his abdomen in a backhanded stroke. The knife entered near the false cartilage of the right side and made a transverse cut across the abdomen. The wound was nearly three inches in length, about two inches below the xiphoid cartilage and penetrated the stomach, making an incision in that viscus about two inches in extent: The dinner he had eaten, consisting of bacon and cabbage and the cider he had drunk, was partially evacuated through the wound. There was no physician nearer than ten miles and Dr. Archer lived twenty miles away. He was sent for, but did not get to see the patient until the third day, nearly 48 hours later. An old soldier who was present undertook to sew up the wound, which he did with an awl, a needle and waxed thread, and dressed the incision. When Dr. Archer inspected the wound he thought best to cut the skin stitches and allow healing to take place by granulation. The man was directed to lay on his back constantly, and strained soup was to be given him for nourishment. The wound

was to be kept clean and dressed once or twice daily. Dr. Archer did not see him again until the ninth day when he found his condition to be favorable, except for a soreness in his right groin, which appeared somewhat swollen and hard. He ordered poultices to be applied twice daily until he should repeat his visit. When he returned, after two or three days, the swelling had become soft and on incising it a large quantity of good conditioned pus escaped and in it two or three pieces of cabbage, which had passed into the abdominal cavity from the wound in the stomach. The patient complained more of the swelling in his groin than he did of the wound in his stomach. After this both wounds healed as fast as could be expected and the man recovered perfectly, except for a small hernia of the stomach."

Dr. Archer, Sr., in volume 2, *Medical Repository*, writes on the "Use of the Polygala Seneka, or Rattlesnake root, in the cure of hives, croup, or cynanche trachealis." This he gives in strong decoctions and claims it is almost a specific in the disease. It is doubtful, however, whether he discriminates between spasmodic croup and the more serious membranous variety.

His son, Dr. John Archer, Jr., also made this disease and its treatment the subject of his inaugural dissertation for the degree of doctor of medicine in 1798. He says, "From what little opportunity I have had of observing myself, and from the experience of others, I take particular pleasure in recommending a medicine which has the surprising power of dislodging the foreign membrane that lines the interior of the trachea. The medicine I allude to is the Seneka snakeroot of our country. It was used first by my father about seven or eight years ago, in a well-marked case of croup, far advanced, with success, after the common remedies had been sedulously administered without the smallest degree of relief; since that time it has been repeatedly used by him, others and myself with similar result." His brother, Dr. Thomas Archer, also says, "I would not give an ounce of Seneka as a chance in the cure of croup, for all the tartar emetic, mercury and cantharides in the United States."

Dr. Archer, Sr., was of the opinion that "putrescence of both vegetables and insects is the cause of remittent and intermittent fevers and that crowded and dirty cities are nurseries of putrefaction." He was a firm believer in the use of Peruvian bark in

the treatment of malarial diseases and says it should be repeated on the 7th or 8th day. In a letter to one of his sons he complains that Dr. Moons, one of his former students, in his inaugural thesis at the University of Edinburgh, had not given him credit for this practice; as it is not to be found in any practical work before that date. It was not until a whole century had passed that the cause of malaria was traced to the bite of the anopheles mosquito and his guess was as good as that of any other person for 100 years.

He also entertained decided opinions in regard to yellow fever. "I am of the opinion," says he, "that the seat of the disease is in the primal viae—that the septic gas impregnates the saliva, water and especially meats; that taken into the stomach it acts as a ferment and according to the concentration of the gas, is the violence of the disease. The nature of this gas, from the experiments I have made, is an acid, and I have, therefore, exhibited absorbents very freely by glyster, with occasionally laxatives and laxative glysters until the motions ceased to be fetid." He mentions one case that "was in a cold sweat and vomiting dark, coffee-colored bile; arms and legs with purple spots, that was cured with absorbents, opium, laxatives and bark. Absorbents and opium given very freely, laxatives to prevent constipation and bark as a tonic." By absorbent I suppose he meant the ordinary alkalies,—and his treatment was probably as efficacious as that of any other practitioner.

His son, Robert H. Archer, was attached to a hospital in Baltimore during an epidemic of yellow fever and the father writes to him in 1800, "I am anxiously concerned for you, dwelling, as it were, in the midst of death. I hope you will be careful to avoid bad company of all sorts and when time and the situation of your patients will admit of it, you will on Sundays, attend some place of divine worship. The neglect of the worship of the Supreme Being is the forerunner of the sinking of a good moral character." The son did contract the disease but, fortunately, recovered and lived to an old age. I simply make this excerpt from one of his letters to show that notwithstanding the adverse judgment of the Presbytery in regard to his lack of qualifications for the ministry, he was an earnest Christian gentleman. However, he was no pacifist and was at times ready to settle his disputes with his fists. On one occasion he had an altercation with the sheriff of the county over some political issue, when the official changed his arguments from

words to violence. The doctor accepted the gage of battle and threw his adversary to the ground and inflicted such effective blows upon him that the man soon cried "Enough." "Do you pretend to know the dose better than the doctor, you rascal?" the physician replied, and he gave him some more punishment for good measure. Upon another occasion he met a man on the public road, who was an influential Tory and who addressed the doctor in an insolent manner. The man dismounted from his horse to attack the physician, but when he found his adversary was already getting out of his carriage eager for combat, he concluded that he had made a mistake and he hastily remounted his nag and rode away.

Dr. Archer was an ardent Republican and held monarchies in abhorrence. He says, "I believe that the King of France was the tenth horn of the beast—if so, it was the first that was to be destroyed. Others are also to be destroyed. . . . Then will the beast and kings and emperors fall together into the bottomless pit—that is, a state of neglect—degraded, despised, and at last forgotten." Nor had he any more favorable opinion of Great Britain. "What do the dear, dear friends of Britain think of the condemnation at New Providence and Jamaica?" he inquired. "I trust it will become an emetic—that they emit their monarchy and their aristocratic principles. Will the Americans tamely say that the French are the only pirates, murderers, plunderers and floggers in the world, when in Nassau, there has been condemned of American property in the month of August to the amount of 293,000 dollars? Will not this open the eyes of Americans? Why was it done? Because the President has dared to appoint envoys to treat with France."

At times Dr. Archer, when overworked, would take refuge at the house of a friend or patient and would be incommunicado even to his wife. It is related that upon one such occasion a stranger appeared at his home and inquired if Dr. Archer lived there, when his wife replied, "A man of that name gets his washing done here." The doctor was said to have been very fond of reading novels, which he did in a peculiar way, always beginning at the end and reading backwards. In this way his exit from a home would be delayed until he had finished the book. This habit was well understood by his patients, who would place novels where he would see them, in order to delay his departure.

In person he was of more than medium height, and was of great bodily strength, and possessed both moral and physical courage to a large degree. He was of an argumentative and combative disposition and though deprived of the power of public speaking through the impairment of his voice by disease, he entered vigorously into the political arena and was a person of great force and influence in his county and State.

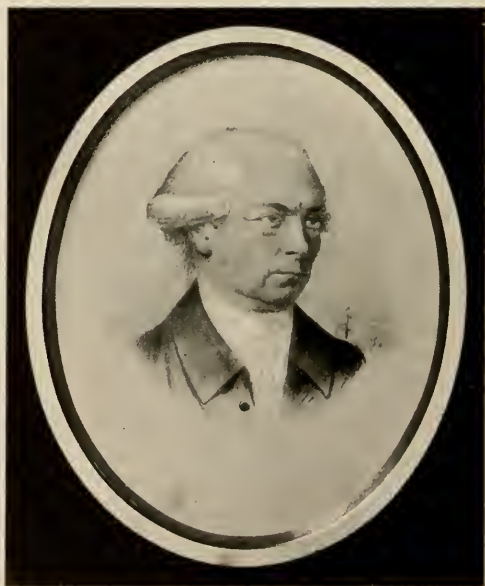
In his will he bequeathed all his property to his wife in trust for their children, during her life or widowhood; on her death or marriage to be divided equally between them. His real estate consisted of 700 acres of land in one body. He directed his executors, who were his sons, to make the following entry in cases in which they considered the debtors, who owed him for professional services, were unable to pay, "Forgiven by order of the testator." It is said that accounts to the amount of several thousand dollars were thus settled. He also requested that his male slaves should be set free when they reached thirty years of age and the female slaves at 25.

In the Medical Repository for 1811, page 312, appears the following obituary encomium: "Departed this life on the 28th of September, 1810, John Archer, Sr., M.D., of Harford County, Maryland. Dr. Archer left this world full of years and full of honors. His life was truly devoted to the service of his fellow creatures and to the glory of the Great Redeemer. As a physician he was beloved in a peculiar manner by all who knew him. Early piety, ripening into maturity with his years, enabled him to meet death in full persuasion of his acceptance with God, through a Redeemer. The doctor took his first degree in the arts at Princeton College, and was one of the first class of graduates in medicine issued from the College in Philadelphia. His great popularity founded in his deserved reputation for probity and honor, led his fellow-citizens, of late years, to elect him their Representative in Congress, until his health failed and he could serve no longer. It is some consolation to the public, for the loss of so valuable a citizen, that he has left four sons emulous of their father's virtues. Three of them are distinguished practitioners of medicine; the other is a counsellor at law and a member of the Legislature of Maryland."

There are two errors, however, in this notice. John Archer received the degree of M. B. from the College of Medicine in Philadelphia and he never applied for the M. D. title, which he could

have obtained after the lapse of three years. The other lapsus is in regard to his sons, who followed in his footsteps. There were four instead of three who were physicians at the time of his demise.

It should be a matter of great satisfaction to the University of Pennsylvania that its first graduate, who was also the first to receive a medical degree from an American college, and whose training was obtained solely in this country, should have had such a distinguished career; and it is equally a matter of pride to the members of the Medical and Chirurgical Faculty of Maryland that he was born in Maryland and pursued his calling in this State and especially that he was one of the founders of this Faculty."



UPTON SCOTT
First President of the
Medical and Chirurgical Faculty

THE VALUE OF CAUDAL ANESTHESIA.

By MONTE EDWARDS, M.R.C.S. Eng.

BALTIMORE, MD.

Although caudal anesthesia has been in existence for the past twenty-three years and is the simplest method of conduction anesthesia for operations in the neighborhood of the perineum, it does not enjoy the same popularity that is accorded methods for other regions of the body.

It consists in the introduction of an anesthetic agent into the epidural space through the sacro-coccygeal membrane so as to bathe the coccygeal, sacral and lower lumbar nerves before they emerge from the vertebral canal and incidentally while they still retain their individual dural coverings.

The procedure is to be confused neither with trans-sacral anesthesia which necessitates the injection of each sacral nerve through the posterior foramina and which is an adaptation to this region of paravertebral block, nor with sacral block which is a combination of caudal and trans-sacral anesthetics.

Description of the technique of caudal anesthesia has been so frequent as to preclude the necessity of any further enlarging on it here. The advantages and disadvantages of the method can however always bear discussion, which is the purpose of this paper.

To be satisfactory an anesthetic should fulfil several conditions, two of which are absolute and three relative:—

Firstly, it must be safe.

Secondly, it must be efficient, to the extent of needing no augmentation from any other source.

Thirdly, it should be relatively easy to perform.

Fourthly, it should facilitate the performance of the operation for which it is being induced.

Lastly, it should minimize the discomfort of the patient on whom it is being employed.

To what extent epidural anesthesia meets these requirements we will consider in their order.

Safety is dependent upon three factors:—

1. The height of ascent of the anesthetic agent within the epidural

space. It had at one time been thought that relatively large quantities of weak novocaine solutions would be better borne than smaller quantities of stronger solutions, but the experimental works of Farr and Shaw independently have shown indirectly that this is incorrect and in fact dangerous. Both of these observers give slightly varying reports of the levels to which an injected dye will rise in the epidural space in the cadaver. Suffice it to say that more than 30 cc. reaches well into the thoracic region and that 75 cc. will probably rise as high as the cervical region. The novocaine reaction is proportional to the height of its ascent, so it is evidently hazardous to use more than 25 cc. Those who desire to adapt the method to abdominal operations, using larger quantities, are probably taking considerable risk.

The speed with which the injection is made also has a bearing on this aspect of the method. A slow injection confines the absorption to relatively low levels, whereas a rapid introduction will force the fluid to higher and dangerous heights.

2. A second hazard lies in the injection of the subarachnoid space—an unnecessary accident if it is realized that the dura terminates at the level of the lower border of the second piece of the sacrum, which level may be represented on the skin surface by a line joining the posterior superior spines of the ilia. So long therefore as the needlepoint is advanced but a short distance beyond the sacrococcygeal membrane and a preliminary aspiration is made, there is a minimum of risk of such an accident occurring.

3. The avoidance of vein puncture is naturally also of great importance. Even though there is a considerable plexus of veins within the sacral canal it is remarkable how infrequently one of them is perforated. Aspiration of blood provides us with a warning, and a slight change in the position of the needle will circumvent an intravenous injection which would result in convulsions and respiratory distress even after doses of but a few cc. of 2% strength.

I do not find reports in the literature of any deaths attributable to the method, and we have had no unpleasant experience of this sort ourselves. There does occur, however, an occasional reaction in which a fall in blood pressure may be recorded, accompanied by acceleration of the pulse and respiration. This will usually respond

to the appropriate stimulants, of which ephedrine would appear to be the most effective and longest sustained.

Efficiency of the method depends upon the bathing of the lower spinal nerves with an anesthetic fluid of a strength sufficient completely to block afferent painful impulses. This is accomplished by the successful introduction of either 25—30 cc. of 2% or 15—20 cc. of 3% novocaine solution beyond the sacro-coccygeal membrane. This would seem to be an unnecessary assertion, but it has occurred quite frequently that the subcutaneous and ligamentous tissues on the dorsum of the sacrum have received the bulk if not all of what was intended for deeper structures.

Obesity and anatomical peculiarities are responsible for most of our failures. In the fat subject the bony landmarks are frequently obliterated. The hiatus then can only be located by trial puncture when the characteristic feeling as of parchment perforated is transmitted to the fingers. The tumefaction consequent on a misdirected needle may also fail to present itself in the obese, but a free unrestricted flow of the anesthetic fluid serves to confirm a successful injection.

Occasionally obstruction to the introduction of the needle from ossification of the sacro-coccygeal membrane or tortuosity of the canal may completely mar the operation. Almost instinctively one is able to recognize when such an obstacle is present, and instead of venturing upon a hazardous injection we abandon the attempt for one or other alternative—as a rule local infiltrations of weaker strengths.

As far as this hospital is concerned there are traceable records of 46 caudal anesthetics administered from January, 1927 to date. The number would be much larger if it were possible to include those given in the dispensary for cystoscopic or other investigation.

The purposes for which it was used are as follows:—

Haemorrhoidectomy	24
Anal fistula	10
Sigmoidoscopy	4
Dilatation of rectal stricture.....	3
Abscess	2
Fissure	1
Supra-pubic prostatectomy	1
Biopsy of rectal tumor.....	1

The anesthesia was complete in 42 cases or approximately 93%. It was supplemented by local infiltration three times and abandoned for inhalation anesthesia once.

The following table gives a comparative picture of the failures in various clinics:—

	Cases	Failures	Per Cent
Shaw	100	17	17
Goldstein and McBee.....	503	60	12
Char	166	7	4.2
Pickles	63	3	5
Mumey and Elliott.....	25	not stated	15
Berry	165	not stated	16
This series	46	4	7.7

It is interesting to observe that caudal and allied anesthetics have been more readily adopted by urologists than proctologists and gynecologists. There are a few noteworthy exceptions of which the Mayo Clinic is the most outstanding, and it is their present-day practice to employ the more complicated sacral block method, which is claimed to be 100% efficient.

There is however genuine facility provided by caudal anesthesia in operations in the neighborhood of the anus. It gives a very good relaxation of the sphincter muscle, equal to that from spinal and definitely more constant than that from ether inhalation. The obtundation extends to sufficient distance from the anus to permit of most fistula operations. For instrumental investigation it is ideal. In sigmoidoscopy for instance, there is so much relaxation of the pelvic musculature that the instrument has much wider play.

It should here be mentioned that what applies to caudal also applies to the more elaborate sacral-block which probably is more certain in its action but is equally more difficult to perform. It is my impression, too, that the success of sacral-block is in no small measure dependent on a good initial injection of the epidural space, for without the obtundation that the latter provides, the search for each individual sacral foramen is attended by considerably pain. Presumably then the epidural injection should suffice whenever its distribution is wide enough for the operation undertaken.

In comparison to 'spinal,' it would seem to be unnecessary to submit any patient to an additional risk where something of almost equal efficiency would serve. This is apparently the generally-accepted

opinion of those more conservative users of the subarachnoid method, many of whom are adapting regional anesthesia to their needs.

The patient's comfort or discomfort is our final consideration. There can be little disagreement on this point. He is relatively more comfortable both during and after operation than with other anesthetics. The injection itself can be rendered almost painless. There is but a single puncture to be made. There is neither nausea nor abdominal distension after the operation and there need be very little interference with bowel function during the convalescence. A normal diet may be resumed in small quantities on the day of operation.

The slowness of administration may weigh differently with different individuals. The method is undoubtedly time-consuming—a half hour usually elapses from the moment of insertion of the needle until the anesthesia is effective.

In conclusion I would submit that caudal anesthesia is a convenient and effective method for proctologic purposes and is deserving of more frequent use than it at present enjoys.

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PSITTACOSIS*

By FRANK W. HACHTEL, M.D.

BALTIMORE, MD.

Psittacosis is primarily a disease of parrots and parrakeets which is apparently transmissible to man. However the infection presents a different picture in man from that seen in the parrot.

The possible relationship between this illness in parrots and small house outbreaks of an atypical pneumonia was first recognized by Ritter¹ in 1879 in Switzerland. Ost² of Berne, in 1882, and Wagner of Leipsic, in 1885, were similarly impressed by the association of these house epidemics of pneumonia with illness among parrots.

In Paris in 1892 and 1893 there occurred a number of cases of continued fever accompanied by an unusual type of pulmonary consolidation. Since Paris had just passed through the pandemic of influenza of 1889-1890, these were at first diagnosed as atypical cases of la grippe. The credit of calling attention to the fact that sufferers from this disease had been in contact with ill parrots is due, according to Macaigne,⁴ to Dubief. Other epidemics have since been reported from Italy, Germany, France, England, and America.

During the Paris epidemic of 1892-1893, Nocard⁵ isolated a bacillus of the Salmonella group from the bone marrow of the wing of a parrot that had died of psittacosis. He named this organism *B. psittacosis*. It belongs to a group of bacteria members of which are not infrequently found in the intestinal canal of animals; a group that includes the paratyphoid bacilli, *Salmonella enteritidis* and *Salmonella aertrycke*. The latter two are often the cause of food infection.

The psittacosis bacillus is a Gram-negative, motile, non-sporogenous rod which grows readily on the ordinary culture media, does not liquify gelatine, causes a primary acidity and terminal alkalinity of litmus milk, produces acid and gas in dextrose-broth but not in lactose- or sucrose-broth, forms a typical typhoid-like col-

*I wish to acknowledge the courtesy of Dr. C. Hampson Jones, Commissioner of Health, Baltimore, for permission to cite the work done at the Bureau of Bacteriology, Baltimore City Health Department.

only on Endo-medium and on eosin-methylene blue agar, and does not produce indol. It resembles closely *Salmonella* Schottnuelleri (beta paratyphoid bacillus) and seems to be even more nearly related to *Salmonella* aertrycke. Indeed Bainbridge⁶ found *Salmonella* psittacosis to be identical with the strain of *Salmonella* aertrycke with which he compared it. Schuetze⁷ has since demonstrated that considerable variation exists in the antigenic structure of different strains of *Salmonella* aertrycke. Fifty per cent of them, however, are antigenically identical with a strain isolated from food infection and known as the "Mutton" type. Perry⁸ therefore has compared the antigenic properties of a psittacosis bacillus isolated from a grey touracou, the original Nocard bacillus, *Salmonella* aertrycke ("Mutton"), *Salmonella* aertrycke ("Newport") and *Salmonella* Schottnuelleri. He found by agglutinin absorption that *Salmonella* psittacosis is identical in antigenic structure with "Aertrycke" bacilli of the "Mutton" type. *Salmonella* aertrycke can be distinguished from most of the other members of the intermediate group by its action on certain carbohydrates and alcohols,—especially xylose, arabinose, and inositol—but can be separated from the beta paratyphoid bacillus by serological methods alone.

Palamidessi⁹ has reported the isolation of *Salmonella* psittacosis from five cases in one family during the outbreak in Florence in 1895. In 1896 Gilbert and Fournier¹⁰ obtained this organism from the heart-blood of a patient dead of psittacosis and also from a parakeet at necropsy. Thomson¹¹ has recently isolated a bacillus of this general type from a case: it, however, did not conform in all its characteristics to the organism described by Nocard. Thomson has also reported that Professor C. J. Lewis has isolated a microorganism identical with *Salmonella* psittacosis and *Salmonella* aertrycke ("Mutton" type) from the cage of parrots responsible for the infection of three cases.

Bachem, Selter, and Finkler¹² have reported obtaining streptococci from psittacosis and Gulland¹³ has stated that pneumococci have been isolated from parrots with this disease.

Bedson, Western, and Simpson,¹⁴ during the recent London outbreak, investigated twelve cases of psittacosis in man and six parrots associated with these cases. One human case died and a necropsy was performed. The evidence, both bacteriological and

seriological, was negative for *Salmonella psittacosis* and other members of this group.

Mayer¹⁵ in Berlin has studied seven cases. Cultures from the blood, stools, spinal fluid, coating of the pharynx, and sputum were negative for Nocard's bacillus. Streptococci were isolated from the blood in three cases and were considered as a mixed infection.

It has also been reported by Krumwiede¹⁶ and his coworkers that in their investigation of psittacosis in New York they were unable to find any evidence of infection with the psittacosis bacillus.

In Baltimore cultures were submitted to the Bureau of Bacteriology of the Health Department of Baltimore City from eleven patients during the recent epidemic. These were from the blood, faeces, urine, and sputum. From many cases two, and from some three or four, cultures were obtained from these various sources. The results of these examinations were invariably negative for *Salmonella psittacosis*. In addition pneumococci, haemolytic streptococci, influenza bacilli and Friedlaender's bacillus were not found in the sputum.

The serum of many of these patients was tested against two stock strains of psittacosis bacillus originally isolated from canaries, a bacillus of this type obtained in Philadelphia from the blood of a parrot with psittacosis, and an organism resembling Nocard's bacillus in many respects isolated from a parrot dying of this disease in Baltimore. Only one of these sera gave complete agglutination with any of these bacteria. This clumped one of the canary microorganisms in dilutions ranging from 1:50 to 1:200. Sera from nine patients were tested against typhoid and paratyphoid bacilli. One of these caused complete agglutination, in a dilution of 1:50, of the typhoid bacillus.

Necropsies were done on five parrots. One of these had developed psittacosis while under observation at the Health Department. This bird was from a house in which a human case had developed. From this parrot an organism was isolated from the stool before death and at necropsy, which resembles the Nocard bacillus in many respects. Cultures taken at the necropsies of the other four parrots were negative. This investigation was carried out by Dr. William Royal Stokes and his coworkers.

Inasmuch as *Salmonella psittacosis* grows readily on ordinary media one would expect it should not be difficult to isolate. Reports

from past epidemics show, however, that it has been found in relatively few instances. In the recent outbreaks bacteriological examinations as reported from Berlin, London, and New York have been negative in the main, and this is also true of the Baltimore investigation. It would seem almost inconceivable that this bacillus could be missed so frequently were it the cause of psittacosis. However, Tidy¹⁷ states that in epidemic human infections with the *Aertrycke* bacillus this microorganism may be obtained from but very few of the cases. Yet were the infection due to the *Nocard* bacillus it would seem likely that agglutinins would develop in the course of the disease. However, the seriological evidence, so far as reported, is preponderantly negative.

These results, together with the fact that no other organism has been consistently found, have caused investigators to think of a filtrable virus as the possible cause of psittacosis. Bedson, Western, and Simpson¹⁴ have reported the demonstration of a filtrable organism in the organs of a parrot that was responsible for two human cases. This virus passes the Chamberland Li and the Seitz Ek filters and is virulent for parrakeets (budgerigars). They have also demonstrated a similar virus in the citrated blood, blood serum and pleural exudate from human cases. Krumwiede¹⁶ and his collaborators have also obtained an organism from a parrot and a human case which passes through the Berkefeld V filter. This virus is pathogenic for parrots, reproducing the disease picture. It also kills white mice, but these animals are more resistant. It is not virulent for hens and pigeons. The possibility of "picking up" a virus in the experimental animals used has been excluded, as far as possible, by using parrots imported before the appearance of the disease and obtained from sources free from psittacosis.

Since the submission of this paper for publication Armstrong, McCoy and Branham¹⁸ have reported the successful transmission of psittacosis to parrakeets by the intramuscular inoculation of filtrates of an emulsion of the heart, liver, lungs, kidneys and breast muscle of a parrakeet dead of this disease.

Lillie¹⁹ also has reported finding small intracellular inclusion bodies in the lesion of psittacosis in both the human being and the parrot. He has suggested that this be named *Rickettsia psittaci*.

The disease is commonly contracted by man from the ill parrot or parrakeet but apparently may be occasionally transmitted from

man to man. All the outbreaks have begun through exposure to parrots or parakeets with psittacosis.

The disease in the parrot is characterized by fever, drowsiness, weakness, loss of appetite, great thirst, and diarrhoea. Parrots are very susceptible and from fifty to ninety-five per cent of the infected birds die.

In man the disease manifests itself quite differently. After an incubation period, which is usually from seven to twelve days, the disease may begin abruptly with a chill or more gradually with malaise, headache, vague pains, some gastric disturbance, bronchitis, and a rise of temperature. Usually after five to seven days the disease reaches its summit and is characterized by an aggravation of the symptoms. The temperature ranges from 102° to 104° F, the pulse rate from 100 to 120. The tongue is often covered with a heavy coating and red at the edges, the digestive disturbances persist, the spleen is enlarged at times, prostration is marked, a low delirium supervenes, and nervous symptoms are frequently pronounced. Pulmonary involvement in psittacosis is of great importance: bronchitis, pulmonary congestion, and often an atypical pneumonia. If the patient escapes complications the symptoms abate between the fifteenth and twentieth day, but convalescence is often long and difficult.

The diagnosis has usually been made—especially in the earlier cases of an epidemic, through the discovery of ill parrots or parakeets in the houses of the patients. In some cases the signs and symptoms have been so slight or so equivocal that diagnosis would have been impossible but for the history of contact with birds having psittacosis. If the work of Krumwiede¹⁶ and his colleagues and of Bedson¹⁴ et al. is confirmed, then the laboratory may be of assistance in making a diagnosis by the inoculation of parakeets with the citrated blood, blood serum, pleural exudate, or sputum from the patient suspected of having this disease.

The prognosis is bad in the old, but is much better in the young. It is particularly grave in those cases that develop pneumonia. The mortality in the various outbreaks has varied from about twenty-five to forty per cent.

Prophylaxis should begin at the port of shipment of parrots and parakeets: only healthy birds should be permitted to be shipped. They should be kept under hygienic conditions during the voyage.

Should the disease break out among the birds at sea, on arrival at the port of debarkation the shipment should be kept in quarantine not less than two, probably better four, weeks. All dead birds and their cages should be burnt. All places in which psittacotic parrots and parakeets have been kept should be properly disinfected. These pets should not be allowed to take food from people's mouths. Parrots or parakeets developing psittacosis in a house should be destroyed and their cages disinfected. Patients with psittacosis should be sent to a hospital and all the precautions necessary should be taken to prevent transmission to others.

In the past the treatment has been symptomatic. During the recent outbreaks convalescent serum was used in some of the cases. The results obtained by this method of therapy have not been reported.

SUMMARY

Psittacosis, a disease of parrots and parakeets, is transmissible to man.

The clinical picture in man and birds is quite distinct.

Nocard's bacillus is almost certainly not the causative agent.

The investigations in London and New York point strongly to a filtrable organism as the cause of psittacosis.

The infective agent probably enters through the upper respiratory tract and through the bite of an infected bird.

The diagnosis is commonly made through eliciting a history of contact with a parrot or parakeet ill of psittacosis.

If the results of the investigations in London and New York are confirmed the laboratory may aid in the diagnosis.

The value of convalescent serum in the treatment of psittacosis is undetermined.

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RED CROSS HOSPITAL CAR

BULLETIN

OF THE

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JOIN THE ALUMNI ASSOCIATION—NOW!

First of all, let the reader of this editorial ask himself whether or not he is an active member of the Alumni Association of his Alma Mater. The chances are about five to one that he is not. Although there are something like six thousand graduates of the medical department of the University of Maryland, only twelve hundred are active members of the Alumni Association. This is a disappointing status of affairs, and one which invites analysis and calls for correction.

No especial effort has been made in recent years to increase the membership of the Association, and it is probable that a large number of alumni, merely because they receive the Bulletin, take it for granted that they are members of the Association. Active membership, however, carries with it a very slight financial obligation, in the form of the annual dues of five dollars. The burden is not great, and should be cheerfully assumed by every graduate of the school.

This is especially true because of the greatly widened sphere of activities of the Association. These have been detailed in previous issues of the Bulletin, and need not be again reviewed. Included in the dues, of course, is the subscription for the Bulletin. The

Editorial Board has been much gratified to receive so many favorable comments upon the steady improvement in the general tone and content of our official publication, and it is felt that most of our readers will consider that the receipt of the Bulletin is in itself worth a goodly fraction of the annual dues.

The combined alumni of the three medical schools which were merged into one greater institution now constitute one harmonious group, partly organized and partly unorganized. An organized army is vastly more powerful and effective than a mere mob. There is no reason why the membership of our Association should not be five thousand. No rivalry should exist between the three wings of our army, other than that inspired by the desire to excel the others in numbers and in loyalty. There was a time, shortly after the merging of the original schools, when the spirit of harmony was not so all-pervasive as it has been in recent years, and this was not surprising.

To anyone who still feels that there is any lack of cohesion between the three wings, a visit to one of our annual reunions will be a revelation. The solidarity of the union is like the bond of the Three Musketeers, from whom we may well borrow their slogan of "All for one, one for all!"

There are a few graduates of every school, of course, who are susceptible to no form of sentimental appeal. The man who feels that, once he has gotten his hands on the coveted sheepskin, the old school can "go to hell," is not the one we would wish to interest in the Association, even if we could. But the overwhelming majority of alumni are not of this ilk. Their interest in their Alma Mater continues until they pass on, and they are sensible enough to appreciate that even the graduates of many years ago reap the benefit of every advance made by the old school.

There is no more effective way of helping the university, and indirectly of helping yourself, than by enrolling in the Alumni Association. Come along, old grad, and right now, while under the spell of this eloquent editorial, sit down, make out your check for five dollars, tear off the application form on the inside back cover of this Bulletin, and send them both in to the secretary. We'll be mighty glad to have you.

THE UNIVERSITY OF MARYLAND BIOLOGICAL SOCIETY

The University of Maryland Biological Society was founded February 11, 1928, by a group of men of the various schools of the University interested in the advancement of science and a closer relationship between the various departments of the University. The purpose of the Society is to promote and advance the biological sciences and sciences related thereto and to facilitate personal intercourse between men and women imbued with the scientific spirit of research .

During the year 1929-30, the Society enjoyed a most successful series of programs which proved to be instructive and inspiring to the members and to those students and visitors who availed themselves of the privilege of attending. A special feature of this year's meetings was the address at the first meeting by Dr. Boris M. Zawadowski, head of the Physiological Institute, Sverdlov University, Russia, "The Effect of Feeding Thyroid upon the Plumage of Fowls." At the second meeting of the year an address was given by Professor Leon Asher, Professor of Physiology at the University of Bern, Switzerland. His subject was "Newer Aspects of the Physiology of the Thyroid Gland." One of our regular program meetings was held in the new building of the School of Pharmacy. During the year there were ten meetings held at which seventeen papers were presented. At the April meeting of the Society, Dr. E. M. K. Geiling, Associate Professor of Pharmacology, Johns Hopkins University, addressed the Society on the subject of "Newer Developments in the Study of Insulin." The last meeting of the spring was held in the Medical Amphitheater, Friday, June 6, and the following speakers addressed the organization: J. A. F. Peiffer, "Etiology of Acute Rhinitis"; T. B. Aycock, "Variations in the Phrenic Nerve in Man"; H. G. Beck, "Laurence-Biedl Syndrome in Man"; and John C. Krantz, Jr., "The Acid-Base Equilibrium of Tincture of Digitalis."

The University of Maryland Biological Society during this year has served to bring into closer co-ordination the members of the College Park group and the Baltimore group of schools who are engaged in research work. This has been done by a regular

autumn and spring meeting held at College Park at which time workers from both sections of the University are permitted to enjoy a joint program of interest to each group of workers.

The Officers of the Society for the current year are:

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Election of Officers

The names listed above are our officers for the term beginning June 1, 1930, and ending June 1, 1931.

PREAMBLE TO OUR CONSTITUTION AND BY-LAWS

We, Alumni of the School of Medicine of the University of Maryland, Incorporated, comprising the graduates of the University of Maryland School of Medicine, the Baltimore Medical College and the College of Physicians and Surgeons of Baltimore City, desirous of perpetuating those associations which began during our professional student life and of keeping our interest in our Alma Mater, and advancing in every legitimate way her welfare, do hereby form an association for the above purposes and do enact the Constitution and By-Laws for the government of same.

ANNUAL REPORT
MEDICAL ALUMNI ASSOCIATION
1929-1930

During the past year the Medical Alumni Association managed to weather the first year of its promotion of the Medical Alumni House. Attendance at out-of-state meetings was as good as usual, there was a slight increase in membership and our relationships with the students were unmeasurably strengthened. The one unfinished major problem now is the raising of about \$17,000 for the Medical Alumni House. The Association has kept in close touch with many of its Alumni and there has been a spirit of close co-operation existing between the school and the association office.

Members everywhere will appreciate the activity of the Board of Directors under the leadership of Dr. C. Reid Edwards, who have worked faithfully all during the winter to organize our activities on an efficient, businesslike and economical basis. During the past twelve month period, the Board has held twenty-eight meetings, and the attendance was unusually good. Most of the men made real personal sacrifices and I want to thank them for the courageous and untiring effort with which they responded to their tasks. The Advisory Committee, with Dr. W. H. Triplett as its head is one of the most aggressive and thorough working groups we have ever had. Their leadership has been an inspiration to all of us. The Trustees Student's Rotating Fund Committee, under the guidance of Dr. William S. Love, did a fine piece of work with the small amount of money at their disposal.

The past year has evidenced a real interest in the Alumni section of the Bulletin. This is proven by the many letters coming from all parts of the country and as far away as Africa from our members who commented upon the readability of the Bulletin. Many sent in personals for the coming issues while others gave us addresses of men whom we had listed among the missing. Everybody can make a contribution to the Association by sending in interesting news items and address changes. The continuity of relationship which the Bulletin afford all graduates with the School should suggest the value of membership in the Association to many who are now inactive. Membership in an Alumni Association too

often means the paying of dues. Other values accrue from this relationship provided everybody does his part. We are doing our best to keep an accurate and up-to-date file but we need assistance in doing this. There are now over fifty-five hundred graduates with about twelve hundred active members. The sheer existence of unity in our organization will go a long way toward making our association a vital influence. The school from which we graduated must grow persistently and an active alumni body is the one factor which we should feel as our responsibility. Alumni unity is an integral part of the lengthening shadow of every great university.

A banquet for the University of Maryland men who attended the Southern Medical Association meeting in November was attended by about forty-five of our graduates. Dr. Lee Elgin, 1925, was the chairman of the Committee in charge of the program which was held at the Miami Country Club.

During the latter part of November, Dr. L. A. M. Krause of the Department of Medicine, gave an illustrated lecture in the Chemical Hall under the auspices of the Alumni Association. Over one hundred and fifty were present to see the interesting films of the Sahara and Egyptian cultural centers which Dr. Krause visited. His comments during the progress of the lecture were very interesting. Refreshments were served in the Medical Alumni House immediately after the meeting.

On December 6th, the Association was fortunate in having a theatre party at one of the best shows of the season. "Pleasure Bound" certainly was true to its name and the many members who attended the party were repaid with an unusually fine entertainment at the Maryland Theatre.

The relationship of the Association with the Student Council stands out as one of our best projects for the year. The Council was made up of unusually good men. They have kept in close touch with us during the year and together we have gone a long way toward making the students potential members of the Association.

The Rotating Fund Committee did an excellent piece of work with the funds at their disposal. When funds were low loans were secured by the Committee thru other sources. I mention them here because they too made their contribution toward better relationship with the Students. This particular phase of work should enjoy

a greater response from those men who are interested in helping needy students.

The Bookstore and the Cafeteria together served as a real center of student life during the winter. Both were well patronized by students and the faculty.

As a contribution to the physical equipment of the University of Maryland the Medical Alumni House has made itself, in the words of a member of the Medical Council, an integral part of the life of the University. Many groups used the House during the year among them being the College Park Alumni Association, the Nurses Alumnae Association, the Student Council, various Committees of the Medical Alumni Association, officers of various classes in the Medical School and the Biological Society of the University.

From the more intangible or personal viewpoint, the Executive Secretary has been available for interviews with the students at all times and this has kept him busy many evenings with fraternity and other groups. A large number of personal interviews were held with students who came for help with a multitude of questions. It should be said here that a good half of the time of the Executive Secretary was spent in organizing the business routine of the Association. This means that there was but little time or opportunity for the development of the projects in the Medical Alumni House or for the promotion of membership and activities of the Medical Alumni Association.

From out of town graduates there have been calls for state lists from all over the country. Some groups like the one in New York and that in Washington have been quite active; others are showing a new interest. Sentiment regarding the future of the Association is strong everywhere.

In conclusion I extend my sincerest thanks to the officers and members for their assistance in helping the executive officers to carry on.

HARRY E. FOULKROD.

PERSONALS

Dr. A. W. Valentine, who is our Field Representative in the District of Columbia sent us an interesting report of the Spring Meeting of the Maryland Medical men of Washington.

Among the list of speakers was our friend, Dr. Russell, of Hernon, Virginia, Class of 1867. Dr. Russell is now in his ninety-first year. His remarks regarding the conditions affecting early practice and of the old faculty of his day were instructive and entertaining.

Dr. Valentine and Dr. Barnes were speakers at a meeting of the College Park Alumni group of Washington which was attended by over one hundred members.

Dr. Lewis W. Glatzau, 1916, has sailed for Europe to take an extended course in eye work at Vienna. He will be there at least a year and has promised to send us some material for the Bulletin. Dr. Glatzau has been practicing eye, ear, nose and throat at DeLand, Florida.

We recently received word of the death of Dr. Linnaeus S. Savage, B.M.C., 1893, in Sibley Hospital, Washington, D. C., after a long illness. He was one of our loyal District workers.

He had been practicing medicine in Washington since 1895 and was the oldest member in point of service on the staff of Sibley Hospital.

News has recently come to us that Dr. C. F. Smith, B.M.C., 1898, is the Assistant Secretary of the Fayette County Medical Society and the editor of The Mirror, the official journal of the society. Dr. Smith is practicing in Uniontown, Pa.

SPRING ACTIVITIES

The distinctive features of the Spring Activities program for this year were the Alumni Luncheon at the Medical Alumni House, the Clinics, the Annual Meeting, the Annual Banquet and the separate functions of the Class Reunion Groups. The activities extended over the week-end beginning Thursday June 5 and ending Sunday June 8.

Registration of all attending alumni filled the morning hours of Thursday although many men were too busy meeting old friends and renewing their acquaintances on the faculty to be bothered by such a perfunctory detail as registration.

The three oldest graduates to sign were Dr. Randolph Winslow,

1873, Dr. W. H. Marsh, 1876, and Dr. Wilmer C. Brinton, 1876. The one to travel farthest to attend was Dr. F. P. Firey who hails from Portland, Oregon.

At noon Thursday a special Buffet Luncheon was served in the Medical Alumni House. This preceded the Clinics and was well attended by local and out of town men.

The Clinics were given this year by Dr. Frederic William Schlutz, 1902, and Dr. George E. Bennett, 1909. Dr. Schlutz gave an interesting clinic on nutrition in infants, using material prepared by Dr. Joslin and taken from the well known Children's Clinic of the School. Dr. Schlutz is now head of the Department of Pediatrics of the University of Chicago, having gone there this spring from the University of Minnesota.

Dr. Bennett drew his material from the orthopedic surgery clinic of the hospital. He was assisted by Dr. Johnson. Over a dozen prominent surgeons were in the audience and commented upon the excellence of the material which was presented. Dr. Bennett is the Associate Professor of Clinical Orthopedic Surgery at the Johns Hopkins University.

The Annual Meeting resulted in one important change in the matter of membership in the Association. By an unanimous resolution it was decided to raise the dues from \$3.00 to \$5.00. The nominations for officers for the new year were accepted in toto by the body and an unanimous ballot was cast in their favor.

In the evening the Annual Banquet was held at the Lord Baltimore Hotel. This affair was very well attended. As in past years it turned out to be the piece de resistance of the entire week-end. The graduating class was there in full force as the guests of the faculty. It was also the opening festivity for many of the class reunion groups.

The speakers at the Banquet were Dr. Raymond A. Pearson, President of the University of Maryland and guest of honor, Dr. Randolph Winslow, 1873, who spoke for the U. of M. graduates, Dr. Walter Wise, 1906, who represented the P. and S. men, and Dr. J. C. Lumpkin, 1898, who spoke for the B.M.C. graduates. Dr. Kenneth L. Benfer, President of the graduating class represented the 1930 group. Dr. J. M. H. Rowland, Dean, introduced the graduating class into membership in the Medical Alumni Association.

THE GRADUATION EXERCISES

1930

The graduation exercises for the Class of 1930 were held at the Lyric Theater Saturday afternoon, June 7. Eighty-seven graduates of the School of Medicine were addressed by the Hon. Ray Lyman Wilbur, Secretary of the Interior.

The names of the graduates and the recipients of honors for the year follows:

Milton Robert Aronofsky..Connecticut	Lester Milton Goldman...New Jersey
Harry Ashman.....Maryland	Jacob Everett Goldstein...New York
George M. Baumgardner...Maryland	Julius Henry Goodman....Maryland
Meyer Milby Baylus.....Maryland	William Alexander Hamer
William Belinkin.....New York	North Carolina
Kenneth L. Benfer.....Maryland	Leon Jackson Harrell..North Carolina
Rudolph Berkowitz.....New York	Gene Melford Harsha..West Virginia
Erwin Plifer Berry...North Carolina	John Chapman Helms.....Virginia
Joseph S. Blum.....Maryland	Emil John Christopher Hildenbrand
Merle Dumont Bonner	Maryland
North Carolina	George Delmas Hill...West Virginia
Eugene Scott Brown..West Virginia	John Harlan Hornbaker....Maryland
J. Howard Burns, Jr.,....Maryland	Rollin Carl Hudson.....Maryland
Lester Thomas Chance	Marshall Vaden Jackson
North Carolina	North Carolina
William Chenitz.....New Jersey	Marius Pitkin Johnson..Connecticut
Archie Robert Cohen.....Maryland	Frederick Doyle Keller..West Virginia
Irvin Joseph Cohen.....Maryland	Abraham Morris Kleinman
Max Hurston Cohen.....Maryland	New York
Matthew Joseph Coppola..New York	Albert E. Kovarsky.....New Jersey
Clay E. Durrett.....Maryland	Samuel Harry Kraemer...New Jersey
Edna Gerrish Dyar	Abraham Kremen.....Maryland
District of Columbia	Esther Frances Kuhn.....Maryland
Charles Joseph Farinacci.....Ohio	Morton Loeb Levin.....Maryland
Wylie M. Faw, Jr.....Maryland	Frank Russell Lewis.....Maryland
Jacob George Feman.....New York	Vernie Emmett Mace..West Virginia
Vincent James Fiocco.....New York	Thomas Francis Magovern
Samuel Fisher.....New Jersey	New Jersey
John Leonard Ford....Pennsylvania	George Bowers Mansdorfer
Daniel Efland Forrest, Jr.	Maryland
North Carolina	Benjamin Herman Kermit Miller
Francis Fielding-Reid.....Maryland	Maryland
James Lyman Garey....Pennsylvania	Isaac Miller.....New Jersey
Abraham Garfinkel.....New York	James Alton Miller.....Maryland
Harry E. Gerner.....New Jersey	Victor Jose Montilla.....Porto Rico
Paul F. Gersten.....New York	Egbert Laird Mortimer, Jr..Maryland
Leon Ginsberg.....New York	Charles Yarnell Moser..West Virginia
	Nathan E. Needle.....Maryland

Robert D. Oliver.....	North Carolina	Nathan Snyder.....	Maryland
Joseph Harry Oppenheim..	New York	Jack G. Soltroff.....	Pennsylvania
Duncan Shaw Owen..	North Carolina	Nathaniel Mortimer Sperling	New York
Zack Doxey Owens...	North Carolina	Horace Gilmore Strickland	North Carolina
Robert Perlman.....	New York	Carl Truman Thompson	West Virginia
Irving Edward Rineberg	New Jersey	Wilton Merle Warman..	West Virginia
Nicholas Michael Romano	Pennsylvania	Jack Weinstein.....	New York
Abner Herman Rosenthal..	New York	Aaron Seth Werner.....	New York
Benjamin Shill.....	New Jersey	Alice Stone Woolley.....	New York
Louis Robert Schoolman...	Maryland	Ralph Fund Young.....	Maryland
Joseph Jacob Smith.....	Connecticut	Samuel Zeiger.....	New York
George John Snoops, Jr....	Maryland		

HONORS

University Prize Gold Medal.....Morton Loeb Levin

CERTIFICATES OF HONOR

Lester Milton Goldman	John Harlan Hornbaker
Max Hurston Cohen	Marius Pitkin Johnson
Abner Herman Rosenthal	

PRIZES

The Dr. Jose L. Hirsch memorial prize of \$50.00 for the best work in pathology during the second and third years.....Harry Ezekiel Gerner

The Dr. Leo Karlinsky memorial scholarship for the highest standing in the Freshman Class.....Meyer Leo Goldman

The Dr. A. Bradley Gaither memorial prize of \$25.00 for the best work in Genito-Urinary Surgery during the senior year.....Joseph S. Blum

The Frederica Gehrmann Scholarship.....David Stanford Clayman

 OPPORTUNITIES FOR PRACTICE

The Office of the Dean of Medicine has received letters indicating that physicians are needed in the following localities:

West Friendship, Maryland—general practice.
 Blue Sulphur Springs, West Virginia—general practice.
 Peach Bottom, Pennsylvania—general practice.

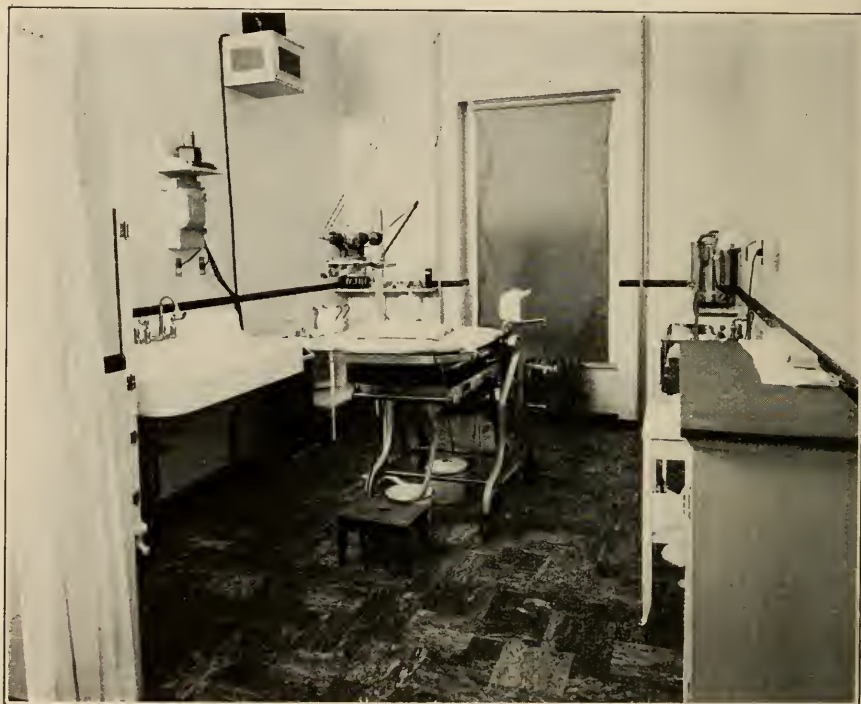


HOWARD M. BUBERT, M.D.

During the past five years, and under the guidance of DR. HOWARD M. BUBERT, the Medical Alumni Association has grown from a small and rather inactive membership until now it is located in the Medical Alumni House at Lombard and Greene Streets. Dr. Bubert should be given credit for increasing the membership, maintaining adequate alumni records, promoting better relationships with students, increasing alumni interest at medical meetings, and for his unselfish activity in sponsoring the Medical Alumni House.

THE JOHN MASON HUNDLEY, SR., CYSTOSCOPIC CLINIC

In memory of Dr. JOHN MASON HUNDLEY, SR., eminent gynecologist, splendid teacher and distinguished citizen of the highest ideals, this clinic is affectionately presented by his son, Dr. John Mason Hundley, Jr.



VIEW OF THE HUNDLEY CYSTOSCOPIC ROOM

Dr. Hundley graduated at the University of Maryland in 1882 with the highest honors, being "medal man" of his class as well as its president. He also received the Miltenberger obstetrical prize for excellence in that subject. He was connected with the gynecological department of the University Hospital throughout his entire medical life. He was a man filled with tremendous energy and enthusiasm and was continually striving for perfection in his work.

As a plastic surgeon he was excelled by none; we recall the spontaneous burst of applause given him at the completion of a Watkins-Wertheim operation for procidentia, performed before a meeting of the American College of Surgeons at the University Hospital.

For years there has been a great need for a cystoscopic clinic for private patients at the University, and through the cooperation of the Superintendent, Dr. A. J. Lomas, a suitable room for this was secured on the west end of the first private corridor.

The clinic is modernly equipped with a Bentley Squier Cystoscopic table which includes a Buckey diaphragm so that X-ray work can be done quickly and much discomfort to the patient eliminated. The department has been in operation for several months and with its excellent facilities an increasing number of patients have been satisfactorily studied and treated.



JOHN CRAWFORD, M.D.
1746-1813

DEATHS

DR. ELDRIDGE COWMAN PRICE, Baltimore, Md.; class of 1874; aged 76; died, March 10, 1930, of gastric carcinoma.

DR. CHARLES EUGENE RIGGS, St. Paul, Minn.; P. & S., class of 1880; emeritus professor of nervous and mental diseases, University of Minn., School of Medicine, past president of the Minnesota State Medical Association; aged 76; died, April 3, 1930, of bronchopneumonia, arterio-sclerosis and uremia.

DR. GEORGE S. WATSON, Elon College,, North Carolina; P. & S., class of 1874; aged 85; died, March 4, 1930, of senility.

MRS. FRANK ANKENNEY, nee Mary Fisher,, Cumberland, Md.; University of Maryland Training School for Nurses, class of 1921, died, recently.

MARTHA AGNES MAGRUDER, Baltimore, Md.; University of Maryland Training School for Nurses, class of 1928; died, May 30, 1930, of cardiac disease.

DR. DAVID CLARK OWINGS, Middletown, Md.; P. & S., class of 1875; aged 75; died, May 9, 1930, of gastric carcinoma with hepatic metastasis.

DR. THOMAS CHEW WORTHINGTON, Baltimore, Md.; class of 1876; a prominent nose and throat specialist of Baltimore; aged 76; died, June 18, 1930, of pneumonia.

DR. JOSEPH TAIT SMITH, Baltimore, Md.; class of 1872; for many years professor of medical jurisprudence and hygiene at his alma mater, aged 80; died, May 10, 1930.

DR. THOMAS W. LINTHICUM, Savage, Md.; class of 1879; aged 75; died, June 14, 1930.

DR. LYNN J. GALLUP, Norfolk, Va.; P. & S., class of 1898; aged 52; died, May 4, 1930, of cerebral hemorrhage.

DR. MILTON RAPHAEL WALTER, New York, N. Y.; class of 1893; formerly an instructor in histology at his alma mater; aged 59; died, March 20, 1930, of Banti's disease.

DR. JOHN B. BAGGETT, Washington, D. C.; Washington University, class of 1869; aged 85; died, March 14, 1930, of arteriosclerosis, chronic nephritis and uremia.

DR. WALTER STITH PHILLIPS, Rapidan, Va.; class of 1897; aged 60; was found dead in bed, March 5, 1930, of cardiac disease.

DR. GEORGE H. CHEWNING, Fredericksburg, Va.; P. & S., class of 1870; also a dentist; aged 83; died, March 20, 1930, of senility.

DR. JOHN W. WARD, Archers Fork, Ohio; P. & S., class of 1890; aged 74; died, March 19, 1930, of pneumonia.

DR. WILLIAM L. QUINN, Fayette City, Pa.; P. & S., class of 1896; aged 58; died, February 7, 1930, of cardiac disease.

DR. THOMAS HENRY GRADY, Clinton, Mass.; B. M. C., class of 1901; aged 53; died, January 20, 1930.

DR. JOHN HOUFF, Baltimore, Md.; class of 1900; aged 54; died, April 4, 1930, of cerebral arteriosclerosis.

DR. ALBERT JOSEPH CARRICO, Washington, D. C.; class of 1896; aged 57; son of the late Dr. Thomas A. Carrico, of Charles County, Md., class of 1848; died, April 19, 1930.

DR. DAVID KERR BRIGGS, Blackville, S. C.; P. & S., class of 1884; aged 67; died, April 10, 1930, of gangrene following embolism.

DR. LINNAEUS S. SAVAGE, Washington, D. C.; B. M. C., class of 1893; aged 58; died, May 4, 1930, of chronic myocarditis.

DR. SAMUEL C. MEHAFFEY, Dennison, Ohio; B. M. C., class of 1892; at one time a druggist; aged 67; died, April 11, 1930, of cardiac disease.

DR. JOHN RICE ANDERSON, Martinsville, Va.; P. & S., class of 1883; aged 62; died, March 11, 1930, of chronic encephalitis.

DR. CYRIL THOMAS WYCHE, Prosperity, S. C.; P. & S., class of 1882; for 14 years member of the State Legislature; aged 72; died, May 4, 1930, of arterio-sclerosis and cerebral hemorrhage.

DR. HENRY IRWIN CLARK, Scotland Neck, N. C.; class of 1879; aged 73; died, April 17, 1930, of cardiac disease.

DR. WILLIS ANDREW LOGAN, Maysville, Okla.; P. & S., class of 1905; aged 52; died, March 17, 1930, of nephritis.

DR. JOHN J. MOORE, South Charleston, Ohio; P. & S., class of 1893; aged 66; died, April 12, 1930, of cardiac disease.

DR. TIMMONS GREENBERRY HAMRICK, Shelby, N. C.; P. & S., class of 1895; aged 75; died, April 15, 1930, of chronic myocarditis.

DR. JAMES DAVIS LOVE, Jacksonville, Fla.; class of 1897; Gold Medallist, a leading pediatrician of Jacksonville, member of the Faculty of the Southern Pediatric Seminary, Saluda, N. C.; aged 56; died, March 26, 1930, of pneumonia.

DR. EPHRAIM G. GOWANS, Salt Lake City, Utah; B. M. C., class of 1897; at one time judge of the juvenile court, superintendent of the State Industrial School and superintendent of public instruction and director of health; formerly lecturer on hygiene, University of Utah; aged 62; died, February 5, 1930, of angina pectoris.

DR. OLIVER G. FALLS, Kings Mountain, N. C.; class of 1881; aged 73; died, April 5, 1930, of cardiac disease.

DR. EDWARD R. LYNCH, Brattleboro, Vt.; B. M. C., class of 1896; superintendent of the Melrose Hospital; aged 59; died, January 16, 1930, of septic pneumonia and arteriosclerosis.

DR. GEORGE S. TRAVIS, East Stroudsburg, Pa.; B. M. C., class of 1896; aged 59; died, January 22, 1930, of angina pectoris.

DR. PATRICK EUGENE HURLEY, Holyoke, Mass.; P. & S., class of 1900; aged 53; died, December 19, 1929.

DR. RICHARD CALDWELL HUME, Adamstown, Md.; class of 1906; aged 53; died, March 1, 1930, of angina pectoris.

DR. I. IRVING RATH, Newark, N. J.; class of 1925; aged 27; died, January 26, 1930.

DR. WILLIAM J. WALLIS, Brevard, N. C.; P. & S., class of 1892; aged 75; died, February 16, 1930, of cerebral hemorrhage.

DR. ABRAHAM T. CRONK, Mt. Airy, Md.; class of 1890; aged 67; died, February 17, 1930, of septicemia.

DR. JOHN OLIVER WAGNER, Beaver Springs, Pa.; P. & S., class of 1880; aged 74; was found dead February 2, 1930.

DR. HORACE BOLIVER HADDON, Gaithersburg, Md.; class of 1893; aged 63; died, February 24, 1930, of cardiac disease.

DR. MALCOLM S. COUNCILL, Bryn Mawr, Pa.; class of 1896; aged 62; died, March 23, 1930, of cardiac disease.

DR. SOLON SCOTT PETERSON, Gastonia, N. C.; class of 1883; aged 72; was found dead in bed, February 19, 1930, of cardiac disease.

DR. HARVEY M. SAMSON, Lancaster, Ohio; B. M. C., class of 1893; aged 60; died, March 14, 1930, cardiovascular-renal disease.

DR. F. M. GORDY, Cusseta, Ga.; P. & S., class of 1881; died, January 19, 1930, of pneumonia.

DR. HAROLD HAYDEN WALKER, New Paltz, N. Y.; B. M. C., class of 1905; aged 47; died, March 11, 1930.

DR. HENRY HARRY WEINBERGER, Baltimore, Md.; class of 1908; aged 43; died, March 28, 1930, of pneumonia.

DR. WILLIAM CHRISTIAN SANDROCK, Baltimore, Md.; class of 1878, also Ph. G., University of Maryland, class of 1875; aged 75; died, July 7, 1930, of a complication of diseases.

DR. MYRON DAVIS, JR., Malden, Mass.; P. & S., class of 1897; aged 57; died, April 25, 1930.

DR. WILLIAM VEENSTRA, PATERSON, N. J.; P. & S., class of 1909; aged 45; died, May 17, 1930, of carcinoma of the larynx, and gastric ulcer.

DR. SAMUEL TIMOTHY NICHOLSON, Washington, N. C.; P. & S., class of 1881; aged 75; died, May 23, 1930, of carcinoma of the lip.

DR. WILLIAM M. RICHARDSON, Iron City, Ga.; B. M. C., class of 1901; aged 58; died, May 31, 1930, of nephritis.

DR. GEORGE ELMER NEWELL, Buena Vista, Colo.; B. M. C., class of 1893; aged 66; died, April 2, 1930, of injuries received in an automobile accident.

DR. ELBERT P. ROSE, Valdosta, Ga.; P. & S., class of 1888; for many years a member of the board of education; aged 68; died, June 1, 1930, of myocarditis.

DR. JAMES J. HAMILTON, Eureka, Texas; B. M. C., class of 1896; aged 57; died, March 8, 1930, of gangrenous cholecystitis.

DR. BENJAMIN W. BOHANNAN, Mathews, Va.; class of 1889; aged 72; died, April 27, 1930.

DR. RAWLEY MARTIN WITTEN, Graham, Va.; P. & S., class of 1880; aged 76; died, February 26, 1930.

DR. GEORGE FRANK JONES, Georgetown, Del.; class of 1889; past president of the Medical Society of Delaware; formerly member of the state board of medical examiners; aged 65; died, April 26, 1930, of cardiac disease.

DR. JAMES HARVEY PETERMAN, Cherry Tree, Pa.; B. M. C., class of 1895; aged 60; died, March 15, 1930, of myocarditis.

BULLETIN

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No. 2

MENSTRUATION THROUGH A UTERO-ABDOMINAL FISTULA FOLLOWING A PELVIC LAPAROTOMY

By LEO BRADY, M.D.

BALTIMORE, MD.

Schauffler (1), in 1929, collected reports of 52 cases of endometrioma developing in postoperative abdominal scars. However, he was able to find in the literature references to only 3 cases of utero-abdominal fistula, namely, those of Loicq (2), Puccioni (3), and Ballin (4), to which he added a report of his own case. In a fairly comprehensive study of the literature I have been able to find only three additional instances of this condition, namely, those reported by Price (5), Iribarne (6), and Drips (7). The rarity of its occurrence, therefore, would apparently warrant the report of another single instance of postoperative utero-abdominal fistula.

An endometrioma is a tumor which contains epithelium of the same structure and possessing the same properties as the endometrium of epithelium which lines the uterine cavity. Usually, but not always, these tumors contain smooth muscle indistinguishable from that found in the uterine wall. The characteristic clinical feature of endometriomas is that with each menstrual period they become swollen and painful. This disturbance is due to the fact that epithelium in the tumor goes through a menstrual change as does the endometrium and it is the blood that develops in these tumors with each menstrual period which causes them to become swollen and painful at these times.

The occurrence of uterine epithelium in tumors far distant from the uterus can usually best be explained by supposing that uterine epithelium has been implanted at these points and has continued to grow. This origin was first suggested by Sampson, in 1922 (8). However, the finding of cases of true utero-abdominal fistula strengthens our belief that in some of the endometriomas that have developed in postoperative scars the endometrium has reached the scars through direct invasion. At any rate the demonstration of direct continuity between the uterine cavity and that of the endometrium in the operative scar at least makes it seem possible that these new growths have been formed by direct invasion. In 1896, Cullen (9) was able to demonstrate by serial sections that in his cases of diffuse adenomyomata of the uterus there was at some point a definite connection between the uterine mucosa and the adenomyoma.



Fig. 1. The utero-abdominal fistula. The probe introduced through the opening in the skin passes easily into the uterine cavity. The small object to the side of the main specimen is the ovary, which was removed.

The following is a summary of our present case: Mrs. E. P., aged twenty-six, was admitted to the University of Maryland Hospital on April 26, 1930. At that time she was complaining of tenderness in the lower abdomen and of a discharge from an old abdominal incision.

Nine years before this admission the patient had been operated upon for an acute pelvic inflammatory disease developing after a miscarriage. At this first operation a large amount of serous fluid was found in the lower abdomen and an inflammatory condition which involved both tubes and ovaries. Both tubes and one ovary were removed. Four cigarette drains were placed in the incision. Pathological study of the tissue removed showed a subacute salpingitis and oophoritis. The patient had a stormy convalescence, but left the hospital three weeks after the operation.



Fig. 2. The specimen has been divided in order to show the fistulas tract from the uterus to the skin. Two pieces of thread define its course.

Since the operation, nine years ago, the abdominal incision has worried the patient constantly. Her menstrual periods have been regular, unaccompanied by pain and of five to eight days' duration. There has never been any metrorrhagia. On the second day of each period, however, a "blood blister" has formed in the center of the abdominal incision and within a few hours after its appearance it breaks and a considerable amount of blood comes out. During the whole time that the patient is menstruating "as indicated by vaginal bleeding" there is a simultaneous discharge of blood through the abdominal incision, amounting probably to, at least, a wine-glassful during the whole time. The bleeding from the abdominal incision usually continues for one day after the vaginal bleeding has ceased.

Examination: The findings of interest were the following: In the lower abdomen was a long midline scar in the center of which was a depression leading to a small opening from which dark red blood was exuding. On pelvic examination the patient was found to be menstruating. The cervix was normal. The body of the uterus was not enlarged, but was firmly adherent to the old abdominal scar. Movements of the uterus were transmitted directly to this scar and downward traction on the cervix caused the sides of the scar to appear as though they were being rolled inward.

Operation: April 26, 1930. Under ether anesthesia an elliptical incision was made, beginning just below the umbilicus and extending to the symphysis. This incision was made in such a way that the entire postoperative scar could be removed with a rather wide margin of tissue. An opening was made into the peritoneal cavity at the upper end of this incision and it was then possible to feel that the uterus was densely adherent to the old scar at a point directly below that from which the dark blood was exuding. By sacrificing a small amount of the fascia of the recti muscles, the operator was able to remove the entire postoperative scar, the utero-abdominal fistula and the uterus, in one piece, along with the left ovary. One abdominal drain was inserted because there was a considerable amount of infection around this fistula. The patient made an uneventful recovery and was discharged from the hospital twenty-five days after the operation with her incision well healed. Since returning home the convalescence has been entirely satisfactory.



Fig. 3. Microphotograph taken from a block of tissue cut from the fistula 1 cm. below the skin opening. The epithelium is of the cuboidal type, which normally is found lining the uterine cavity. There is some old blood present in the lumina of the glands.

Pathological Report: The specimen consists of an elongated piece of the abdominal wall to which is attached the body of the uterus. In the center of this piece of abdominal wall is a sinus which leads directly into the uterine cavity. It is possible to pass a probe from the skin opening of this fistula directly into the uterine cavity—a distance of 8 cm. (Figs. 1 and 2). Except for the presence of this fistula, the uterine cavity appears normal. A moderate amount of cutaneous fat and some fascia and muscle have been removed along with the abdominal scar. Microscopic study of sections taken immediately below the opening of the sinus into the abdominal wall shows subcutaneous fat, some muscle fibers from the recti muscles and many glands in which is demonstrable the typical cuboidal epithelium found in the normal uterus (Fig. 3).

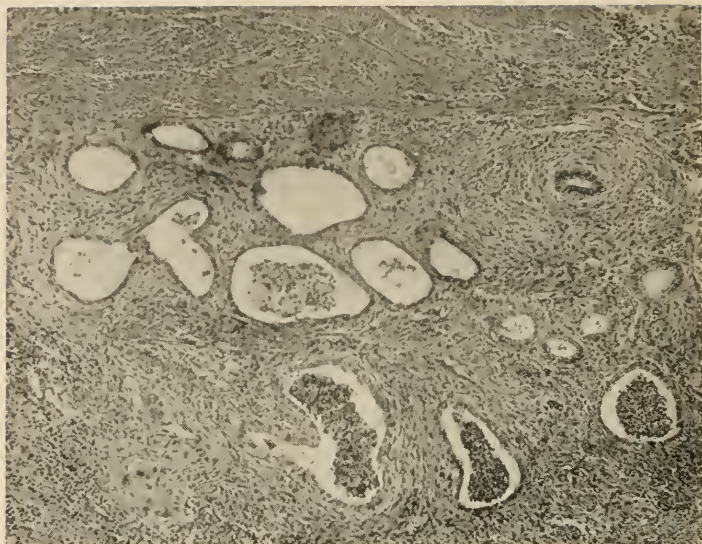


Fig. 4. Microphotograph taken from a block cut immediately below the skin opening of the fistula. At this point the tract has divided into many branches. The appearance is that of a typical adenomyoma.

It is to be regretted that we did not have the opportunity to study this unusual case more thoroughly before operation, but although the patient had waited nine years before deciding on the second operation, once she had made up her mind, she wanted it performed at once. It would have been of great interest to have observed the effect of various drugs, such as pilocarpin, atropin, and ergot, upon the rapidity of the flow of blood from this fistula. Elias Iwanow (10) and E. Kehrler (11) experimentally produced utero-abdominal fistulas so as to study the physiology of the uterus, using aluminum cannulas to keep the fistulas patent. In our case we were, of course, dealing with a fistula which was patent only while the patient was menstruating and which ceased to discharge during the intermenstrual period. Naturally, our own studies were restricted to the menstrual period.

This case is instructive in that it emphasizes the fact that a utero-abdominal fistula is a possible complication to be thought of whenever we do a salpingectomy and insert abdominal drains down to the

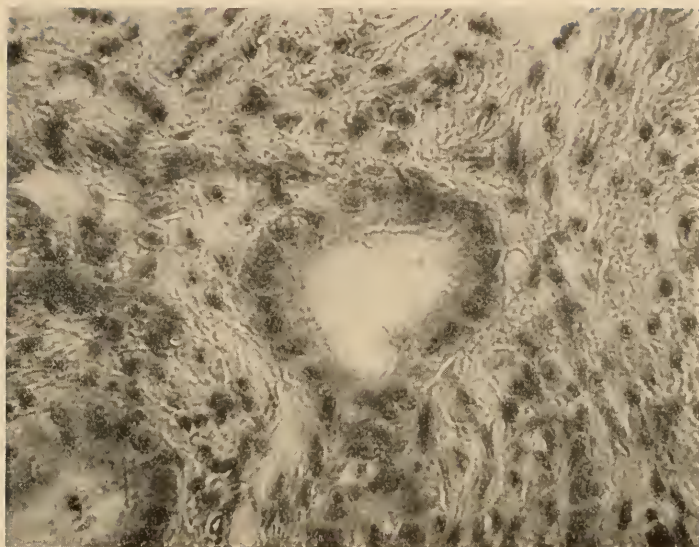


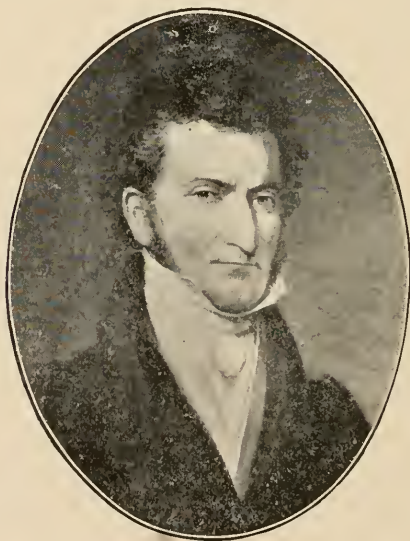
Fig. 5. Microphotograph showing high-power picture of epithelium lining the fistulous tract.

uterine cornu. As a routine, whenever a fallopian tube is removed, the uterine cornua are closed with catgut sutures. In a rare case, however, these sutures probably either break or cut their way through the uterine musculature, and thus render it possible for the endometrium to spread along a tract from the uterine cavity to the skin. It would seem that the development of such a fistula would be particularly apt to occur in cases of tuberculous salpingitis, but I have found in the literature only one such instance, namely, the one reported by Iribarne, under the title "Tuberculous Salpingitis with Fistula" (6).

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JULES T. DUCATEL
1796-1849

THE ABSORPTION AND UTILIZATION OF THE CARBOHYDRATE OF ARCTIUM LAPPA IN NORMAL AND DIABETIC SUBJECTS*

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For many years chemists and clinicians have considered the possibility of using another carbohydrate as a substitute for starch and glucose in the diabetic diet. As far back as 1851, Bouchardt (1) observed that levulose was tolerated better by diabetics than glucose and recommended in mild diabetes, the use of 50 to 100 grams per day with which treatment he found many of his patients remained sugar free. Grafe (2) recommended the use of caramel as a substitute carbohydrate along with roasted starches and anhydrous sugars. Likewise, this investigator found that these sugars were tolerated better than cane sugar and glucose. Although neither the normal nor diabetic organism is able to utilize pentoses such as xylose, Cori and Cori (3) showed that the administration of dioxycetone, a triose, would produce additional body glycogen as evidence of its being utilized.

In 1874, Kütz (4) first recommended the use of inulin-containing vegetables as substitute carbohydrates in the treatment of diabetics. Since this time the question of the absorption and utilization of inulin has been a subject of considerable controversy in the chemical and clinical literature of the world. In 1923, Joslin and Root (5) showed that levulose and also the Jerusalem artichoke which contains inulin gave rise to a lesser degree of hyperglycemia than did glucose and ordinary starch in diabetic patients.

Renewed interest was developed in this work due to the classical experiments of Root and Baker (6) and also Carpenter and Root (7) who showed the value of the Jerusalem artichoke in the treatment of diabetes. Although much clinical evidence has been obtained bespeaking the value of inulin in the treatment of diabetes, the literature is also quite replete with conflicting reports as to whether or

* Delivered before the University of Maryland Biological Society, 1929.

not inulin can be utilized by the body which ostensibly contains no inulase or inulin-splitting ferment. To settle this question of utilization of inulin by the human body, Okey (8) in 1919 studied the hydrolysis of inulin by the body and found that it was partially split by the hydrochloric acid in the stomach and suffered marked decomposition due to the action of the intestinal flora. This investigator also concluded that the feces of humans fed a general diet contained an inulase capable of hydrolyzing inulin.

The utilization of pure inulin by the animal organism was proved by a method which is unequivocal by Shimizu (9) who showed that pure inulin exhibited protein-sparing action upon the diets of dogs fed on a protein diet. Furthermore, Bodey et al. (10) showed that pure inulin from the Jerusalem artichoke when fed to white rats gave rise to an increased storage of glycogen in the liver.

We became interested in this question of utilization of substitute carbohydrates in diabetes and our attention was attracted to *Arctium Lappa*, a coarse biennial weed which is found abundantly in Europe, Asia and North America. The root and seeds of this plant at one time or another have had recognition in the principal Pharmacopoeias of the world. The Japanese use the roots of *Arctium Lappa* as a vegetable and when cooked in fat it forms an important item of the Japanese (11) dietary. We found the roots of *Arctium Lappa* (Burdock) are rich in polysaccharide hydrolyzable into levulose, presumably inulin or an inulin-like substance. On account of the large percentage of carbohydrate in this root (50 to 70 per cent when air-dried) and also on account of the ready accessibility of the material, its use in the treatment of diabetes suggested itself.

ANIMAL EXPERIMENTATION

White rats were fed a basal diet of cacao butter and after a definite period of time the livers were analyzed for glycogen. Another series of rats was fed cacao butter plus powdered air-dried Burdock root and the livers of these rats were analyzed for glycogen. It was found that the livers of rats having ingested Burdock root contained about 5 times as much glycogen as those which had been fed the basal diet of fat. Dogs were fed a diet of meat of fixed nitrogen content and after a metabolic equilibrium had been established, these dogs were fed, in addition to the meat, large quantities of air-dried

Burdock root. Upon the ingestion of this material the nitrogen output of the urine was reduced about 7.5 per cent which indicated the utilization of the carbohydrate in Burdock root by dogs. The feces of these dogs when analyzed for carbohydrate showed that from 75 to 90 per cent of the carbohydrate was absorbed. The dogs were placed on a fat diet free from carbohydrate and with a small amount of protein. After several days acidosis ensued which was evidenced by a lowered carbon dioxide-combining power of the blood. After feeding these dogs Burdock root, the carbon dioxide-combining power of the blood was restored to normal within a few days. This indicated that the material possessed antiketogenic properties.

CLINICAL TRIALS

With Silver and Cohen (12) the author carried out several clinical tests with this material on normal and diabetic subjects. Normal subjects were given enough of the Burdock root in the form of a cereal and cookies to represent 100 gms. of carbohydrate and their blood sugar curves plotted in the usual manner. Likewise the same patients were fed 100 gms. of white starch on a subsequent day and the blood sugar curves obtained were typical of the normal patients, the sugar rising from approximately 90 mgms. per 100 cc. to 140 mgms. per 100 cc. With Burdock root in no instance was there any hyperglycemia observed. With diabetic patients we failed to obtain any degree of hyperglycemia when this material was administered in quantities equivalent to 30 gms. of pure carbohydrate. In each instance, however, the diabetic showed marked and prolonged hyperglycemia when starch was given in place of Burdock root. It is indeed interesting to note that the ingestion of 30 gms. of starch in the case of two patients produced a more marked hyperglycemia than was experienced when 30 gms. of starch and 60 gms. of Burdock root were ingested. Our experience in this respect is somewhat similar to the experiments of Solarino (13) who observed that levulose plus glucose produced less marked hyperglycemias in dogs than did the administration of the same amount of glucose alone. It is likely that the levulose in its metabolism calls forth from the pancreas sufficient insulin for its own combustion and also for the combustion of additional carbohydrate.

We have found the following regime of treatment most satisfactory: when patients require 75 gms. of carbohydrate and have a tolerance of 50 gms. per day, instead of building up the tolerance to 75 gms. by the administration of the necessary amount of insulin, we have substituted in place of 25 gms. of additional carbohydrate obtained from ordinary food 25 gms. of carbohydrate in Burdock root in the form of a cereal and cookies. In about 10 or 11 cases so treated, therapeutic results have been obtained. If, however, the patient has a negative tolerance, it is doubtful whether or not the Burdock root would be useful, for its utilization in the body seems to depend upon its capacity to call forth from the pancreas residual insulin.

During the administration of Burdock, we have failed to find appreciable amounts of the material in the feces of patients.

SUMMARY

Evidence has been brought forth to show that carbohydrate in Burdock root is absorbed and utilized. Furthermore, its value in the treatment of diabetes has been shown in a limited number of cases treated.

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SYPHILIS

A CLINICAL STUDY OF 316 PRIVATE CASE RECORDS

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Syphilis presents itself to the medical profession as a problem worthy of serious consideration, due to the frequent visceral and central nervous system involvement which often leads to incapacitation of the individual. Its economic importance ranks high among infectious diseases because of the expense of prolonged treatment and loss of time due to serious impairment of health.

During the past few years 316 patients were diagnosed as having syphilis at The Polyclinic. The majority of this number were not aware of the presence of the disease until it was discovered during the routine examination.

There were 216 men and 100 women. The youngest was 14 years and the oldest 81 years of age. 301 were white and 15 were negroes.

TABLE I.

<i>Stage of the Disease</i>	<i>Number of Cases</i>	<i>Percent</i>
Primary	13	4
Secondary	27	9
Tertiary	272	86
Hereditary	4	1
TOTAL.....	316	100

Table I reveals a surprisingly small number of patients seen in the early stage of the disease. Thirteen (4%) were primary and 27 (9%) were seen in the secondary stage. The diagnosis and the management of the early cases is often comparatively simple. The characteristic appearance of the chancre and the presence of the *Treponema pallida* on a fresh smear from the lesion, makes the diagnosis certain in the primary stage. In the secondary stage, the Wassermann test is positive in practically one hundred per cent.

Two hundred and seventy-two cases (86%) of the series were seen in the late stage of the disease. A large per cent of these patients had received treatment elsewhere. In no instance had the treatment been prolonged and intensive enough to eradicate the disease. The majority had received less than three months' active treatment. One or two injections of arsphenamine, followed by a few weeks of mixed treatment by mouth or a course of mercury rubs, was the average treatment recorded.

TABLE II.

	No. of Cases	Percent
Patients with clinical evidence of the disease and Positive Wassermann.....	210	67
Positive Wassermann without clinical evi- dence	85	26
Clinical evidence with Negative Wasserman	21	7
TOTAL.....	316	100

In Table II is shown the classification of findings from which the diagnosis was made. Two hundred and ten cases (67%) had clinical evidence of the disease and positive complement fixation test on the blood or spinal fluid. A high per cent of this group required painstaking examination to reveal the clinical manifestations of syphilis. A neurologic examination was made on all the patients who showed a positive blood Wassermann but negative evidence on routine physical survey. Many of the cases classed as neurosyphilis were found by this method.

Eighty-five patients (26%) gave a negative history of a primary or secondary lesion and no evidence of syphilis could be found on physical examination. The Wassermann reaction was strongly positive in each instance on two or more successive tests. Our invariable custom is to require more than one positive complement fixation test before the diagnosis of syphilis is made.

There were twenty-one patients (7%) with definite evidence of syphilis whose blood and spinal fluid were negative. These were mostly late skin and cerebro-spinal syphilis of long duration.

TABLE III.

<i>Tertiary Syphilis</i>	<i>No. of Cases</i>	<i>Percent</i>
Cerebro-spinal	90	31
Cardiovascular	28	11
Late skin and mucous membrane.....	21	8
Visceral	16	6
Bones and Joints.....	9	4
Lungs	3	1
Iritis	3	1
Gumma of testicle.....	4	2
Miscellaneous	98	36
TOTAL.....	272	100

In Table III are recorded the various types of tertiary syphilis, classified according to the structures involved.

Clinical or serologic evidence of central nervous system damage was recorded in ninety patients (31%). If the spinal fluid had been studied routinely on all patients with a positive blood Wassermann, the percentage of neuro-syphilis would have been greater.

The cardiovascular system was involved in twenty-eight patients (11%). There were five patients with aneurysm of the aorta; six with destructive lesions of the aortic valve and myocardial insufficiency; and seventeen with aortitis. Five of the cases with myocardial insufficiency had enormous hearts. The early changes consisting of aortic insufficiency and left ventricular hypertrophy had been superseded by further weakening of the entire heart muscle. Three patients in this group have been under observation for more than three years and are actively engaged in business. The tambour-like sound heard over the aortic area, so often referred to in the literature, was a rare finding in this series. It is an early sign of aortitis and soon becomes replaced by the rough systolic murmur of advanced aortitis. Few patients report for examination until the disease has progressed beyond the early stage.

Eighty-five (26%) gave positive blood Wassermann's on two or more successive tests and were classed as miscellaneous because no definite lesions could be found on physical examination. This demonstrates the importance of routine examination of the blood on all patients presenting themselves for examination. The masked or latent

type of syphilis may be considered one of the typical forms of the disease. No disease quite so often deceives the physician as does syphilis.

When a patient presents a variety of indefinite symptoms, which are not explained by the clinical findings, final disposition should not be made until the Wassermann report is received. This rule if adhered to will prevent many revisions in the diagnosis and management of the patient.

Several of our patients with central nervous syphilis gave a history of declining health many years before the disease was discovered. The more common symptoms recorded were headache, irritability, depression, insomnia and lessened powers of concentration. These symptoms were attributed to physical and mental stress, and too often were ignored, no medical advice being sought. A few patients were in perfect health before the sudden onset of symptoms. This was well illustrated in the three patients with transverse myelitis, included in the cerebro-spinal group. One patient, a man 35 years of age in perfect health previously, had led an active outdoor life for 20 years. He received a slight injury to his back and a few days later became completely paralyzed below the waist. His blood and spinal fluid reaction was strongly positive for syphilis. After careful questioning he recalled having a small penile sore 15 years previously, which healed spontaneously. No history of a secondary eruption was obtained.

In the central nervous system group 31 (30%) gave a negative Wassermann on the blood and a positive reaction on the spinal fluid. This high percentage of negative blood tests with positive spinal fluid findings is a strong argument in favor of routine lumbar puncture on all patients when syphilis is suspected. As an illustration of the importance of this procedure, a man 48 years of age was examined at The Polyclinic in 1923. He had consulted many physicians in several States because of severe pains in his arms and legs. He was an athletic man, an ex-prize fighter. Between attacks of pain, which were spot-like in character, he was in perfect health. During the previous 12 years numerous blood Wassermann tests had been made and because they were negative the possibility of syphilis was excluded. His spinal fluid was strongly positive in all dilutions. Under

careful management he has remained free of symptoms to the present time. A lumbar puncture made with a small caliber needle is a simple and safe procedure, and often furnishes the evidence for diagnosis in certain obscure conditions.

The treatment of syphilis still remains one of the major problems of medicine. Table IV indicates the extent of treatment given the patients under discussion. No attempt is made to outline the method of treatment or the results obtained.

TABLE IV.

	No. of Cases	Percent
Patients treated 6 mos. to 1 year	80	50
Patients treated 1 year to 2 years	58	36
Patients treated 2 years to 3 years	20	12
Patients treated 3 years or more	4	2
TOTAL.....	162	100

Analysis of Table IV reveals the fact that 80 patients (50% of the total treated) discontinued treatment before the end of one year. Since 86% of the entire series were in the late stage of the disease, it follows that the results of treatment were not satisfactory in the majority of instances. It was impossible to trace all of these patients. Those who answered follow-up inquiries gave a variety of reasons for not reporting for further treatment. The chief reasons recorded were (1) Health improved and no further treatment considered necessary, (2) Discontinued treatment because of economic reasons, (3) Continued treatment under physicians more conveniently located.

The end result on the 82 patients (50%) who were treated from one to three years was satisfactory. The majority are actively engaged in business and report regularly for observation.

The greatest problem in the management of the patient is keeping him satisfied under prolonged treatment and observation. The private physician or clinic, without social service co-operation and support, must depend upon follow-up letters to keep the patients coming regularly. Recent public health educational work on venereal disease control has been of decided value in teaching the laymen the importance of uninterrupted treatment. Few patients at present discontinue treatment without good reason.

TABLE V.

	No. of Cases	Percent
Number of patients treated regularly.....	82	26.5
Number of patients treated irregularly.....	80	25.5
Number of patients who refused treatment..	45	14
Number of patients referred elsewhere.....	100	31
Number of patients died before treatment...	9	3
TOTAL.....	316	100

As shown in Table V eighty-two (50%) of the treated cases reported regularly for treatment and co-operated in every way. These patients are still under observation and report regularly for a periodic examination. This number corresponds accurately with the number of patients treated more than one year and reported in Table IV (81).

Forty-five patients (14%) refused treatment. The majority of this number, however, consulted other physicians or reported to the Out-Patient Department of the Memphis General Hospital. A few refused to believe they had syphilis and remain untreated.

One hundred patients (31%) resided in other cities and were referred to their home physicians for treatment.

There were nine deaths (3%) before treatment was started. Two died of acute myocardial failure; two of ruptured aneurism of the aorta; and five of intercurrent infections.

The responsibility for the diagnosis of syphilis in the early stage, rests upon the medical profession. If we are to expect a cure of the disease, we must begin treatment before the vital structures have become damaged. Indolent ulcers should be scraped and smears subjected to dark field study. Headaches and arthralgias, particularly if more intense at night, should arouse our suspicion. Complement fixation test on the blood should be a routine procedure in office and hospital practice.

It is generally conceded by syphilologists that judicious treatment with arsphenamine, mercury, and iodides will cure a high percentage of early syphilis. It is also a recognized fact that the late stage of the disease with involvement of the cardiovascular and central nervous system in most instances is unfavorable for cure. Early

diagnosis and intensive treatment therefore offer the only hope of eradicating the disease before the vital structures are irreparably damaged.

SUMMARY

- I. In a series of 316 patients with syphilis, 272 (86%) were diagnosed in the late stages of the disease.
- II. There were 216 (67%) with clinical evidence of the disease and positive finding in the blood or spinal fluid; eighty-five (26%) with more than one positive blood Wassermann but with negative physical evidence of the disease; twenty-one (7%) with clinical manifestations but negative blood and spinal fluid.
- III. Thirty-one (30%) of the central nervous group gave negative blood but positive spinal fluid Wassermann reactions.
- IV. Eighty (50%) of the treated cases received less than one year's continuous treatment; eighty-two (50%) were treated from one to three years with satisfactory results.
- V. The responsibility for the early diagnosis of syphilis rests upon the medical profession. Intensive treatment judiciously given at the outset offers the only hope of eradicating the disease.



Medical School

THE DIAGNOSIS OF METASTATIC NEOPLASM OF THE LUNGS BY THE ROENTGEN-RAY

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Neoplasms of the lungs present in the main characteristic roentgenograms. This method of examination, therefore, offers valuable assistance in determining with a high degree of accuracy the nature of these tumors. At times, however, concurrent disease may render the identification more difficult. When this occurs, before formulating definite conclusions, weigh well all the available clinical data, and repeat the roentgenological examination at frequent intervals. Since the introduction of this method in the investigation of pulmonic disorders, the frequency with which metastatic deposits occur in the lungs, is becoming better appreciated by the profession. The finding of a pulmonary metastasis in the routine roentgen examination may be, however, purely by chance, as the physical signs indicative of pulmonic malignancy may on occasion, be extremely vague or absent. The symptoms may also be masked by signs originating in other organs, especially in metastatic cases. In many instances, however, the site of the primary lesion can be determined only by an autopsy.

Carcinoma is the most common malignant condition encountered in the lungs. The majority of the carcinomas are of metastatic origin. Sarcoma and hypernephroma occur also, but much less frequently than carcinoma. According to Grove and Kramer (1), of all carcinomata, the pulmonary variety ranks seventh in the order of frequency, with an incidence of 0.15 per cent in all autopsies, about one per cent of all carcinomas and two per cent of all deaths from pulmonary disease.

In the differentiation of pulmonary neoplasms, the discovery of a malignant lesion elsewhere is most helpful in making a diagnosis. When possible, a biopsy, either of the primary or of a secondary growth, is of the uttermost value. In one case of our series, where the site of the primary tumor could not be determined, the diagnosis of metastatic carcinoma of the lung was confirmed by microscopical examination of sections removed from a small growth in the skin.



Fig. 1. Metastatic carcinoma, nodular type. Primary source undetermined. Biopsy of skin growth also revealed the presence of a carcinoma.

In the reontgenogram, pulmonary neoplasms reveal themselves as single or multiple shadows. The size, shape, regularity, position, relation to the root of the lung and to the bronchus, the character of the infiltrations and manner of extension of the growth and also its relation to the heart, aorta and trachea, as well as to the surrounding lung tissue, give information, valuable in making a diagnosis of lung tumor.

Pulmonary carcinoma may be divided into two types: 1. primary and 2. metastatic.

Primary form: The greatest number of primary tumors of the lung are carcinomata. Their origin is either in the root of the lungs or in the parenchyma. The root or bronchial type is by far the more frequent. Passler (2), in a study of seventy cases, found that in seventy per cent of these the lesion began in the bronchus. Out of thirteen cases reported by Otten (3), nine originated in the bronchus. According to Hesse (4), primary carcinoma occurred ninety-nine times in 63,088 necropsies. Of 58,497 autopsies reported by von Wiczkowski (5) only 125 were primary cancers of the lung.

Metastatic form: There are three types of tumors that commonly metastasize to the lungs: 1. carcinoma, 2. sarcoma and 3. hypernephroma.

For the purpose of roentgenological studies, malignant tumors of the lungs may be divided into two groups: 1. parenchymal and 2. bronchial. These may be further divided into four descriptive types, viz.: 1. hilar or infiltrating, 2. nodular, lobar or massive, 3. miliary, and 4. pleural.

1—According to Pfahler (6), the hilar or infiltrative type is five times more frequent than the nodular form. It has its origin in the root structures and infiltrates towards the healthy lung in wide strand-like processes. A peculiarity of the hilar growth is its tendency to invade the upper part of the lung, without involvement of the apex. Hilar malignancy invades the lung in an irregular manner, but usually manifests itself in the roentgenograph as a triangular shadow with its base at the hilum and its apex outwards. In its early stage it resembles an inflammatory process—the lesion most commonly found in the root area; but in its later stages it is more easily



Fig. 2. Large metastatic nodule at arrows; fluid overshadowing a new-growth on the opposite side.



Fig. 3. Metastatic sarcoma; bilateral multiple nodules. Primary seat in the testicle.

recognized. Under the latter circumstances the whole lung may be involved. The bronchial type belongs to this class. As it generally produces symptoms early, it can usually be recognized clinically in the first stages. As a rule, however, this type cannot be demonstrated roentgenologically until a break occurs through the bronchial wall into the pulmonary tissue; but its existence may be inferred by the presence of signs which indicate an obstructive bronchial lesion. This affection is usually unilateral and is revealed by a dense shadow in the hilum, but at times associated conditions, such as atelectasis and bronchiectasis, make the diagnosis more difficult. On the film the atelectatic portion of the lung appears as an anatomically limited, smooth shadow of homogeneous density with normal lung-tissue markings; while bronchiectasis manifests itself as a mottled fan-shaped density usually in the lower areas of the lung.

2—The nodular type is usually multiple, but it may be single. When seen early it presents a localized, well defined, circumscribed area of variable density, spherical or circular in outline, with at times

a fuzzy appearance. The density varies in different individuals, and bears no relation to the size of the growth, as a small nodule may present a denser appearance than a large one. There are usually no changes in the pulmonary markings surrounding the mass, in the early stage, but inflammatory changes may appear later. The nodules are scattered in the parenchyma of one or both lungs. The nodular type is the most frequent form of metastatic tumor observed in the early cases. When single, the mass may have the appearance of a primary lesion, and occasion some confusion. Multiple and bilateral growths are practically always secondary.

3—The miliary type consists of finely mottled shadows, diffusely scattered throughout both lung-fields. These shadows are discrete, dense, sharply outlined and are associated with an extensive increase of the pulmonary markings. This type mimics closely miliary tuberculosis.



Fig. 4. Illustrates the miliary infiltration of a metastatic hypernephroma.

4—The pleural type, as described by Hirsch (7), is characterized by a complete obliteration of one pulmonic field. This finding may also be obtained when fluid is present in the pleural cavity either in association with carcinoma or alone. In the former event withdrawal of the fluid has little, if any, influence on the appearance of the radiogram; but in the latter instance aspiration of the fluid produces a decided change in the picture. This type was believed to occur heretofore only in the form of a primary pleural endothelioma, until Pfahler (6) described a progressive thickening of the pleura with an associated pleural effusion caused by a direct extension of carcinoma from the breast to the pleura.

SARCOMA

Sarcoma of the lungs occurs also as a primary or as a metastatic neoplasm. Primary sarcoma is very rare. It manifests itself in the radiograph as an extensive, dense, homogeneous shadow. This growth involves the parenchyma. In the majority, it is slow growing, and well defined. In two cases observed by Wessler and Jaches (8), the lesion was in the lower lobe.

Metastatic pulmonary sarcoma, although rare, is more frequently observed than the primary type. In a large proportion of instances it is secondary to sarcoma of the bone. Metastatic sarcoma casts on the X-ray film a dense, well defined, circumscribed, circular or spherical shadows, varying in size from that of a pea to that of an orange or even larger. The shadows are denser than those of carcinoma and are much more clear cut and regular in outline. The disease is usually bilateral. It does not have the same tendency to massive infiltration of an entire lobe as carcinoma, but occurs in the form of numerous small nodules.

HYPERNEPHROMA

Hypernephroma is the most common tumor of the kidney. It metastasizes early to the lungs. It involves first the left lung and later both lungs. The roentgen appearance is characterized by small miliary shadows extending out from the roots and scattered throughout both lungs. Less frequently, however, it is revealed by an infiltrative process. The nodules simulate, in many respects, carcinoma, and in consequence a differential diagnosis cannot always be made

without the clinical data. It is usually slow growing, and, not infrequently, several years may elapse after the removal of the hypernephromatous kidney, before metastatic pulmonary manifestations occur.

COMMENT

Eighteen metastatic neoplasms of the lungs have been observed by the author. Of these, fifteen were carcinomata; one, sarcoma and two, hypernephromata.

The primary seat of the tumor was definitely established in nine instances, viz.:

Breast	2
Bronchus	1
Stomach	1
Uterus	1
Kidney	2
Prostate	1
Testicle	1

According to Warfield (9), cancer of the breast shows the highest percentage of metastasis to the lung. Of 516 autopsies on patients who died of mammary carcinoma, pulmonary metastasis was observed in 178 instances. Malignant tumors of the breast, stomach, prostate and kidneys are the most frequent primary sources of metastatic lung conditions.

In our series, there were ten males and eight females. The males also predominated in Carman's (10), Adler's (11), and Otten's (5) series. The ages ranged from 28 to 67 years. The right lung was more frequently involved than the left, viz, eight times on the right side, two times on the left side, and in eight instances the disease was bilateral. Of the 374 examples reported by Adler, 184 were on the right side and 157 on the left, and of the 13 cases observed by Otten, the disease was located on the right side in seven and on the left side in six. On the other hand, Weller (13) found the right and left sides involved with equal frequency. The primary variety, according to Adami and Nicholls (12), usually affects the right side. The nodular type was the one most frequently observed in this series, i. e., in ten of the eighteen cases. Two were of the infiltrative type.

The remaining six were of the lobar type. In all of these the process was confined to the upper right lobe. Fluid masked the growth in four of the eighteen cases. In one of these, a metastatic growth, the diagnosis was made at autopsy. The occurrence of fluid is inconstant, and depends largely upon the stage of the disease. It is more often observed in the later stages and is less common in primary than in metastatic tumors. At times, it is necessary to withdraw the fluid and to repeat the X-ray examination before a diagnosis of lung tumor can be made. In two other cases besides those mentioned, a slight exudate occurred, but it did not overshadow the tumor.

Although the symptoms were strongly suggestive of a malignancy of the lung in many of the cases composing this series (see Table), the roentgen examination was the deciding factor in the diagnosis. Progressive weakness and loss of weight, the two most outstanding symptoms, occurred in all of the cases with the exception of one of two weeks' duration. Pain in the chest is a late manifestation. It occurred in eleven patients. Dyspnea was present in nine cases, and a

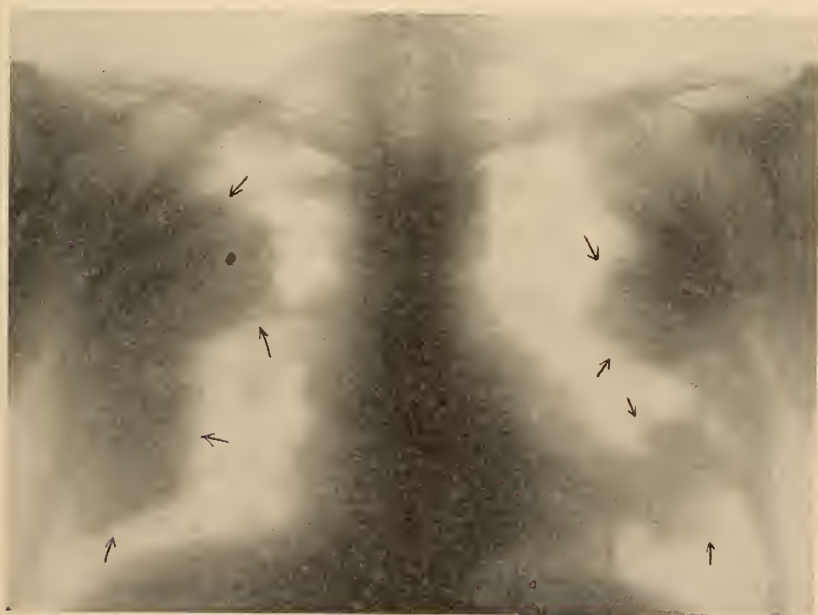


Fig. 5. Benign masses involving both lung fields. On re-examination four years later, the shadows have disappeared. This case illustrates the importance of repeated roentgen examinations.

CASE	AGE	DURATION	PAIN	COUGH	SIDE	WEAKNESS	EXPECTORATION OF BLOOD	LOSS OF WEIGHT	DYSPNOEA	FEVER	DIAGNOSIS
1	65	8 Mos.	+	+	Right	+	0	+	0	0	Cancer
2	41	5 Mos.	+	0	Right	+	0	+	+	+	Cancer
3	52	2 Mos.	+	+	Right	+	+	+	+	0	Cancer
4	54	6 Mos.	0	+	Right	+	0	+	+	0	Cancer
5	62	6 Mos.	0	+	Right	+	+	+	+	0	Cancer
6	28	8 Mos.	+	+	Both	+	0	+	0	0	Sarcoma
7	62	6 Mos.	+	0	Both	+	0	+	0	0	Cancer
8	48	18 Mos.	+	+	Both	+	+	+	+	0	Cancer
9	32	10 Wks.	0	+	Left	+	+	+	0	0	Cancer
10	67	2 Wks.	0	+	Left	+	0	+	0	+	Cancer
11	32	8 Mos.	0	+	Right	+	0	+	+	0	Cancer
12	50	12 Mos.	0	+	Right	+	0	+	0	+	Cancer
13	54	2 Wks.	+	0	Right	0	+	0	+	+	Cancer
14	51	3 Mos.	0	0	Both	+	0	+	0	0	Hyper- Nephroma
15	39	24 Mos.	0	0	Both	+	0	+	0	0	Cancer
16	56	1 Mo.	0	0	Both	+	0	+	+	+	Cancer
17	55	12 Mos.	0	0	Both	+	0	+	+	+	Cancer
18	64	24 Mos.	0	+	Both	+	0	+	0	0	Hyper- Nephroma
Total			7	11		17	5	17	9	6	

temperature between 100 and 102 F. was observed in six cases. The presence of fever, however, may be very misleading, as it is often the result of complications. Five patients expectorated blood.

Benign lesions may at times cause confusion in the diagnosis. In the differential diagnosis, the more common lesions affecting the lungs, such as tuberculosis, encysted empyemas, lobar pneumonia and interlobar pleural effusions, should be given careful consideration. While benign lesions are rare, they must nevertheless be differentiated from malignant neoplasms. The progressive changes observed in films on repeated X-ray examinations will usually furnish the clue as to whether a tumor is benign or malignant. The following case, though not included in the above series, illustrates the importance of making repeated roentgenographic examinations. The patient was thought for a time to be harboring a malignant tumor, as large, well defined masses were revealed in the periphery of both lungs (see Fig. 5), but on re-examination, four years later, the masses had disappeared.

SUMMARY

Eighteen cases of metastatic neoplasms of the lungs are described in this study. Metastatic carcinoma is observed more frequently since the introduction of routine examinations of the chest with the X-ray. This method of examination should never be neglected when the removal of a primary malignant growth from any part of the body is contemplated. The roentgenological examination is the method par excellence for the study of pulmonary neoplasms. In patients complaining of an unaccountable progressive weakness, a careful X-ray study of the lungs is always indicated, as the roentgenogram sometimes furnishes the first clue to the presence of metastatic tumors in a symptomatically silent lung.

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ROBERT SMITH
Provost 1813-15

BULLETIN

OF THE

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THE UNITED STATES PHARMACOPOEIAL CONVENTION

The United States Pharmacopoeial Convention was held in Washington, May 13, 1930 where delegates and alternates from recognized medical and pharmaceutical colleges and associations came to assume the stupendous responsibility of revising the United States Pharmacopoeia.

The University of Maryland may well pride itself in the fact that one of its former graduates, Dr. Reid Hunt, Professor of Pharmacology at Harvard University, presided over this assembly as president. The principal work of the Pharmacopoeial Convention in meeting assembled is to elect officers and trustees of the Convention and also to elect a Committee of Revision. The Convention decided to elect seventeen physicians to the Revision Committee and thirty-three pharmacists including scientists working in allied fields. This apportionment of the work of the Revision seems to be necessary as a large amount of the work of Revision is of a chemical nature and must be carried on by experts in this field. The seventeen physicians elected to the Committee of Revision constitute the sub-committee on scope of the general Committee of Revision of the Pharmacopoeia along with certain pharmacists who have had special training to qualify them for this important position. The work of Revision of the Pharmacopoeia is divided among fifteen sub-committees elected from the general Committee of Revision and the Chairmen of these sub-

committees become the Executive Committee of the general Committee of the Revision of the Pharmacopoeia.

According to the constitution and by-laws of the Pharmacopoeial Convention, the responsibility of revising the Pharmacopoeia rests upon the shoulders of the Executive Committee. Immediately after the election and organizing of the Committee on Revision, the work of revising the Pharmacopoeia was begun. Dr. E. Fullerton Cook of Philadelphia was elected again as Chairman of the Revision Committee of the Pharmacopoeia. Dr. Cook has had great experience in Pharmacopoeial work and carries on the business of revising the Pharmacopoeia with remarkable expedition.

It is the purpose of the present Committee on Revision to make the use of the Pharmacopoeia of the United States indispensable in the work of physicians and pharmacists. It shall endeavor also to make its chemical and biological tests for the identity and purity of drugs used in this country, from the standpoint of science, the foremost in the world.

The Alumni of the University of Maryland will undoubtedly watch with interest the Revision of our National Standard on account of the important role that it plays in the restoration of health through the treatment of disease with drugs. Among the University of Maryland men who will play an important part in the Revision of the United States Pharmacopoeia are Reid Hunt, E. F. Kelly, H. A. B. Dunning, A. G. DuMez and John C. Krantz, Jr.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

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DR. RALPH TRUITT.....	Assistant Professor of Psychiatry
DR. JONAS FRIEDENWALD.....	Lecturer in Ophthalmic Pathology
DR. A. C. TIEMEYER.....	Associate in Obstetrics
DR. R. D. WEST.....	Associate in Ophthalmology
DR. FRANKLIN B. ANDERSON..	Associate in Otology
DR. CHARLES CAHN.....	Instructor in Ophthalmology
DR. F. A. HOLDEN.....	Instructor in Diseases of the Nose and Throat, Otology and Ophthalmology
DR. HARRY WASSERMAN.....	Instructor in Dermatology
DR. C. W. PEAKE.....	Instructor in Anatomy
DR. H. S. RUBENSTEIN.....	Instructor in Anatomy
DR. M. C. PORTERFIELD.....	Instructor in Pathology
DR. M. L. SMALL.....	Assistant in Ophthalmology
DR. JOHN G. RUNKLE.....	Assistant in Ophthalmology
DR. DANIEL S. FISHER.....	Assistant in Obstetrics
DR. M. B. BALLARD.....	Assistant in Obstetrics
DR. E. S. EDLAVITCH.....	Assistant in Gynecology
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DR. HUGH BRENT	From Associate Professor of Gynecology to Professor of Clinical Gynecology
DR. HARRY M. STEIN	From Associate Professor of Medicine to Professor of Clinical Medicine
DR. HARRY M. ROBINSON	From Associate Professor of Dermatology to Clinical Professor of Dermatology
DR. J. DAWSON REEDER	From Associate Professor of Diseases of the Colon and Rectum to Clinical Professor of Diseases of the Colon and Rectum
DR. W. H. TOULSON	From Associate Professor of Genito-Urinary Diseases to Clinical Professor of Genito-Urinary Diseases
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DR. JOHN LUTZ	From Instructor in Anatomy to Associate in Anatomy
DR. ISIDORE SIEGEL	From Instructor in Obstetrics to Associate in Obstetrics
DR. C. G. WARNER	From Instructor in Pathology to Associate in Pathology
DR. MOSES GELMAN	From Instructor in Orthopedic Surgery to Associate in Orthopedic Surgery
DR. W. A. SIMPSON	From Instructor in Orthopedic Surgery to Associate in Orthopedic Surgery
DR. H. F. BONGARDT	From Instructor in Surgery to Associate in Surgery
DR. I. O. RIDGELY	From Instructor in Surgery to Associate in Surgery
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DR. MONTE EDWARDS	From Assistant in Anatomy to Instructor in Anatomy
DR. JOSEPH POKORNEY	From Assistant in Histology to Instructor in Histology
DR. J. HULLA	From Assistant in Histology to Instructor in Histology
DR. M. H. GOODMAN	From Assistant in Dermatology to Instructor in Dermatology
DR. A. C. MONNINGER	From Assistant in Dermatology to Instructor in Dermatology
DR. A. LLOYD MACLEAN	From Assistant in Ophthalmology to Instructor in Ophthalmology
DR. HENRY F. GRAFF	From Assistant in Ophthalmology to Instructor in Ophthalmology
DR. W. R. JOHNSON	From Assistant in Pathology to Instructor in Pathology
DR. THOMAS B. AYCOCK	From Assistant in Surgery and Anatomy to Instructor in Surgery and Anatomy
DR. CLYDE MARVEL	From Assistant in Surgery to Instructor in Surgery
DR. S. DEMARCO	From Assistant in Surgery to Instructor in Surgery
DR. KARL STEINMULLER	From Assistant in Surgery to Instructor in Surgery



DR. JOHN EVANS

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The names listed above are our officers for the term beginning June 1, 1930, and ending June 1, 1931.

THE PRESIDENT'S MESSAGE

The Medical Alumni Association of the University of Maryland has chosen a new group of men to conduct its affairs during the coming year. I am sure I speak for all of them when I say that we appreciate the honor conferred on us and will do all in our power to further the interests of the Association.

Since June 1st the Executive Committee has met frequently, and no group of men could work in greater harmony or show more earnestness. They deserve the loyal support of every alumnus.

I have recently learned a few facts relating to the University of Maryland, that I thought might interest you, especially those outside of Baltimore and the State of Maryland.

Until 1920 the University of Maryland consisted only of the Professional Schools in Baltimore. They were the Departments of Medi-

cine, Dentistry, Pharmacy and Law. In that year the Maryland State College at College Park was made a part of us. Their schools were as follow: Arts and Sciences, Education, Engineering, Agriculture and Home Economics. They now have a fine group of buildings on the Washington Boulevard, with nearly 1500 students enrolled. The Schools in Baltimore, including the School of Nursing, have about a like number. The State Legislature passed a bill making us a true State University.

The School of Medicine has made an enviable record in the past few years—take those from 1925 to 1929 inclusive. The official records of the American Medical Association show that in the years 1925, 1926 and 1927 that the school graduated every man in the senior class, and every one of these graduates passed all of the State Boards in this country—a perfect score. In 1928 the number of graduates was 95, with one failure before the State Boards, and in 1929 we graduated 101 with only one failure. This is a splendid record and accounts for the fact that we have eight or nine times as many applicants for the first year class as we can accept.

Last year a fine new building was erected on the northwest corner of Lombard and Greene to house the Department of Dentistry and Pharmacy. The old Dental building across the street has been entirely rebuilt on the inside to provide new Laboratories of Pathology, Bacteriology and Biological Chemistry. The cost of renovation and equipment was approximately \$100,000.

At the present time all of the buildings north of the old Medical Building and Amphitheatre as far as Redwood Street (formerly called German Street) and for a distance of 180 feet east of Greene Street, are being torn down to provide a site for the new Law Building and later for the new Medical Buildings, which will be erected in the form of a quadrangle—opening on a central court. These improvements, authorized by the State Legislature, seem to have fixed this as our permanent location. Is it visionary or impractical to believe that in the near future a new hospital, additional laboratory buildings, a library and perhaps dormitories will be added? If these State buildings and grounds can be somewhat isolated from the nearby manufacturing district by providing attractive gateways at each of the four limits—remove car tracks and heavy traffic from Lombard

Street, and thereby eliminate noise—it will greatly add to the attractiveness and tone of the whole neighborhood. If this comes to pass we will have a group of buildings of which all will be proud. These are all essential to the continued good work of these Schools.

Two years ago our Association established the Medical Alumni House on Lombard Street just opposite the old Medical Building. It consists of a dormitory for twenty men, a cafeteria and book store. All of these provide a meeting place for the students, and better contacts with the Alumni. Each year a larger number of old friends and classmates return with their sons to see them registered as first year medical students. The Alumni Association is doing a worthwhile work when its interest center around the student body. They are the future Alumni and will greatly strengthen it in the years to come.

The Bulletin of the School of Medicine, as all will note, has improved greatly in the past few years. I am sure the Editors will be glad to have you submit original articles for publication.

Many may not know of the Endowment Funds now being accumulated for the use of the various Departments of the University. The entire amount in the hands of the Trustees of the Fund will on January 1st, 1931, amount to more than \$130,000, of which \$110,000 are for interests connected with the Medical School and \$20,000 for other departments.

In addition there is in the hands of the Regents of the University the Warfield Fund of \$40,000 and also the Emerson Fund of which about \$18,000 is for the Medical School. This makes altogether a total endowment for the Medical School purposes of \$170,000.

Recently the Alumni Association has been interested in a movement to increase the Endowments of the Fund for "The John C. Hemmeter Chair of Physiology." Some years ago Doctor and Mrs. Hemmeter started this Fund which now amounts to \$10,000. It is expected that colleagues, friends, and old patients will greatly increase this amount.

There are now over 6000 living graduates of the combined schools in the United States, with 1250 of these in the State of Maryland.

Only about 1000 men are active members. A drive is now on in our State to enlist every graduate as a member, and the Pennsylvania men are planning a large banquet in October during the Annual Meeting of the State Society. Will not every interested Alumnus send his dues at once, and also see that his own State is well represented? The Alumni Office will be glad to send you a complete list of men in your State.

I have tried to bring to you an encouraging outlook for the future of the University, and I believe that only by a complete harmonizing of all the different elements that go to make up our Association will we accomplish any real good.

A large, enthusiastic, unselfish Alumni group could help to change the whole outlook at Lombard and Greene. It has been done in other places—it can be done in Baltimore.

JOHN EVANS.

LET'S HAVE HARMONY

A new or renewed interest in the activities of the Medical Alumni Association of the University of Maryland is greatly needed. The problems that are constantly coming up in our school cannot fail to concern us, however different the psychology of our members. The departments of our institution should have sufficient funds and other means to develop new fields of research. Our institution is the result of a long evolution, but it is far from the ideal University. Certainly if it is worthy of existence it should be made possible for it to rapidly approach this goal.

It is true that any established institution must always deal with subversive and wholly unreasonable movements of opposition. This sort of opposition should be dealt with as a routine policy matter like any other nuisance. We cannot help but believe that fundamentally our members are desirous of harmony and rapid progress, and with a membership such as we have, both active and inactive combined, working harmoniously for worthy accomplishment, an ideal institution cannot fail to become a reality.

THE UNIVERSITY BOOK STORE

The management of the University Book Store of the Medical Alumni Association, 519 W. Lombard St., Baltimore, Md., has been assumed by Mr. Jos. W. Scarborough. He was associated with the Medical Standard Book Store until it went out of business several years ago. Since that time he has conducted a store of his own on West Saratoga Street. He comes to us highly recommended and is prepared to supply books on consignment to Alumni or members of the profession both in and outside the State. Your patronage will be appreciated by the officers of the Alumni Association.

CORRECTION

Dr. T. O. Freeman, Mattoon, Ill., has called attention to the fact that Dr. C. F. Smith, B.M.C., class of 1898, died about four years ago. The Dr. Smith who is referred to on page 63, of the July issue, is Dr. Charles Franklin Smith, class of 1923. We are sorry to have made this mistake.

ITEMS

Dr. Eva F. Dodge, class of 1925, is at Southern Pines, N. C., convalescing from an attack of cerebro-spinal meningitis contracted while in China, where she was engaged in the practice of her profession. We take pleasure in announcing that she has recovered without any permanent stigmata.

Dr. Wm. Groce Harrison, Birmingham, Ala., class of 1902, has been elected the president of the Alabama State Medical Association for the ensuing year.

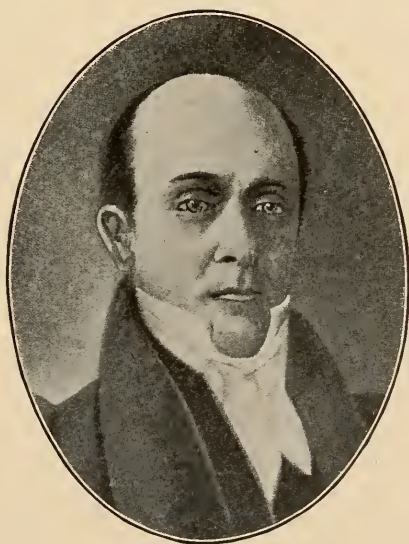
Dr. Samuel Seldner, 4900 Belair Road, celebrated his seventy-ninth birthday on Sunday, February 2. Many prominent physicians called to extend their good wishes. Dr. Seldner is a graduate of the University of Maryland of the class of 1872 and is still actively engaged in the practice of medicine. He studied in Germany and Austria when an American medical student was a "rara avis" in those countries.

WEDDING

The wedding of Miss Mary S. Clarke, daughter of Arthur B. Clarke and the late Rose D. Clarke, Speedway Park, Shillington, and Dr. J. Henry Orff, of Reading, Pa., B. M. C., Class of 1904, took place in the Little Church Around the Corner, New York City, March 31, 1930.

Miss Clarke, who is a graduate of the Reading High School, Wilson College and a member of the College Club, is prominent in the younger social set of Reading. Dr. Orff is a member of the various local Medical Societies, the Pennsylvania State Medical Society, the American Medical Association, the Masonic fraternity, and is connected with the Medical Department of the Reading Company in Reading.

They will reside at 229 East Lancaster Avenue, Speedway Park, Shillington, Pa.



JOHN BEALE DAVIDGE
One of the Founders

DEATHS

- DR. JACOB SIDNEY BLACK, De Soto City, Fla.; B. M. C., class of 1882; postmaster of De Soto City; aged 62; died in July, 1930, of cardiac disease.
- DR. JOHN R. BRODBECK, Codorus, Pa.; class of 1879; aged 74; died, July 23, 1930, of cerebral hemorrhage.
- DR. ALBERT FRANCIS CALDWELL, JR., New Bedford, Mass.; B. M. C., class of 1896; aged 59; died, May 31, 1930, of a perforated gastric ulcer.
- DR. DUNDAS RALPH CAMPBELL, Rockville Center, N. Y.; B. M. C., class of 1905; served during the World War; aged 52; died, June 8, 1930.
- DR. NORVAL LETCHER COINER, Durham, N. C.; class of 1884; aged 70; died, March 24, 1930.
- DR. MICHAEL P. CONWAY, Auburn, N. Y.; P. & S., class of 1883; aged 68; was found dead, June 24, 1930, of cardiac disease.
- DR. FREDERICK T. DALE, Depauville, N. Y.; P. & S., class of 1888; aged 71; died, June 23, 1930, of cerebral hemorrhage, arteriosclerosis and locomotor ataxia.
- DR. FREDERICK PEABODY DROWNE, Warren, R. I.; P. & S., class of 1904; served during Spanish-American and World Wars; aged 50; died, June 27, 1930, of a self inflicted bullet wound.
- HELEN LOUISE DUNN, Baltimore, Md.; University of Maryland Training School for Nurses, class of 1923; died, August 5, 1930, of intestinal obstruction.
- DR. GEORGE WASHINGTON ENSLEY, Baldwin Park, Calif.; P. & S., class of 1886; aged 66; died, May 27, 1930.
- DR. EDWARD THOMAS GIBBS, Gainesville, Ga.; P. & S., class of 1906; aged 48; died, July 2, 1930, of cardiac disease.
- DR. DONALD ROBERT GILFILLAN, National Military Home, Ind.; B. M. C., class of 1903; served during World War; aged 50; died, July 29, 1930, of pneumonia consecutive to an appendectomy.
- DR. A. EDWARD F. GREMPER, Baltimore, Md.; B. M. C., class of 1889; aged 64; died, August 8, 1930.
- DR. GEORGE STEVENS HAZARD, Hollis, N. H.; P. & S., class of 1890; aged 63; died, April 13, 1930, of cardiac disease.
- DR. JOHN WISE HEBB, JR., West Friendship, Md., class of 1901; aged 54; died, May 30, 1930.
- DR. ELMER E. HEILMAN, Hillsdale, Pa.; P. & S., class of 1893; aged 61; died, May 7, 1930.
- DR. URIAH O. HEILMAN, Leechburg, Pa.; P. & S., class of 1881; aged 76; died, March 17, 1930, of pneumonia.
- DR. JAMES M. JOHNSTON, Huntingdon, Pa.; P. & S., class of 1896; aged 68; died, May 5, 1930, of cerebral hemorrhage.
- DR. JOHN J. JONES, Wilmington, Del.; P. & S., class of 1879; aged 75; died, July 24, 1930, of septicemia.
- DR. JOHN S. KLOEBER, Selah, Wash.; class of 1886; aged 65; died, July 15, 1930, of carcinoma of the liver and sigmoid.
- DR. WILMER G. LOCKARD, New Castle, Colo.; B. M. C., class of 1896; aged 62; died, April 7, 1930, of cerebral hemorrhage.
- The Bulletin is indebted to Dr. Nathaniel Spengler, Tampa, Fla., class of 1903, for the following obituary notice:
- DR. CICERO W. LOVE, able physician and surgeon, prominent in fraternal, social and church circles and one of the best loved men in Lakeland, Fla., died, suddenly, February 5, 1930, of cardiac disease. His death came as

a great shock to his family and friends. He had practiced medicine in Lakeland for 27 years, locating in this city shortly after his graduation from the Medical School of the University of Maryland in 1903. Dr. Love was 53 years old, and was born near Monroe, Union County, N. C., July 15, 1876. He left his office about 2 o'clock yesterday afternoon and went to his home. He had complained of a slight attack of indigestion, but neither he nor his family took the attack seriously. He was at the hospital yesterday morning, and had performed his usual duties, including an operation, and had given no intimation of his condition. The attack came on shortly after the noon hour. About 10 p. m., his condition became alarming and he soon afterward passed away.

- DR. FRANCIS D. MILLER, Jacksonville, Fla.; P. & S., class of 1882; veteran of the Spanish-American War; aged 69; died, August 3, 1930, of chronic myocarditis.
- DR. EDMUND A. MUNOZ, Baltimore, Md.; P. & S., class of 1892; on staff of U. S. Veterans' Hospital, No. 52, Boise, Idaho; aged 67; died, July 24, 1930, of chronic pulmonary tuberculosis.
- DR. HENRY WILLIAM NOLTE, Newark, N. J.; B. M. C., class of 1898; aged 60; died, August 6, 1930, of cerebral hemorrhage.
- DR. JAMES A. RIEDY, Monongah, W. Va.; P. & S., class of 1902; aged 57; died, July 23, 1930, of cardiac disease.
- DR. HUMPHREY WILMER BARBOUR ROWE, Hillsboro, Md.; P. & S., class of 1901; aged 49; died, March 10, 1930, of multiple sclerosis and postoperative hemorrhage.
- DR. DAVID M. SAMPSELL, Winfield, Pa.; P. & S., class of 1884; aged 74; died, June 6, 1930.
- DR. JOHN FLETCHER SHIRLEY, Honea Peth, S. C.; class of 1883; aged 69; died August 19, 1930, of cardiac disease.
- DR. MARCUS DUKE SMITH, Cambridge, Md.; class of 1914; served in the World War; aged 38; died, July 25, 1930, after a lingering illness.
- DR. AMBROSE H. STUBBS, Peach Bottom, Pa.; B. M. C., class of 1896; aged 55; died, May 11, 1930, of nephritis. The following highly laudatory notice was copied from "Down Lancaster Way," Philadelphia Inquirer:

WITHOUT PRACTICING PHYSICIAN

With the passing of Dr. Ambrose H. Stubbs, of Fulton township, seven townships of the Lower End of Lancaster county are without a practicing physician in their midst—a region that has supported as many as six in all ages and is now dependent upon the boroughs of Oxford, Quarryville and Rising Sun for medical assistance.

Dr. Stubbs was not an old man, but he was of the old school of country physicians, now a vanishing type. His father had been a physician in the Lower End, but died at the early age of 52 years.

The son had practiced medicine for forty years. He was not only a prominent physician, but was well known as a citizen throughout this and neighboring counties. He owned several farms, took an active interest in community affairs, was a local leader in Republican politics, served a term as clerk of the courts, and was ever foremost in public affairs. He was especially active during the World War, in Red Cross labors and the sale of Liberty Bonds.

Active as a practitioner before the era of good roads, automobiles, modern appliances and conveniences, he labored indefatigably and wrought a noble work, in ministering to the sick and afflicted and he covered a wide area of territory.

The occasion of his funeral brought to Little Britain Presbyterian Church, of which he was a member, one of the largest assemblages of people that church has ever known. The ceremonies were impressive and unique in that the deceased had perfected every plan for his funeral and his wishes were faithfully executed. He set the hour, high noon, and directed lunch be served in the church dining room to all present. He named his pall-bearers, selected his two favorite hymns and enjoined the minister to be brief in his remarks and non-eulogistic.

The last nine lines of "Thanatopsis" expressed his ideas of a last farewell and he would have the minister deliver them. And thus it was that Dr. Ambrose H. Stubbs faded from the picture while his memory is enshrined in the hearts of countless numbers to whom he had devotedly ministered.

The following notice was clipped from the Boston Herald of July 13, 1930. by Dr. Henry Joseph Keaney, B. M. C., class of 1901, for the Bulletin:

DR. GEORGE L. WALLACE

to the Editor of The Herald:

The national committee for mental hygiene shares with the state of Massachusetts its great regret over the passing of Dr. George L. Wallace. Both sustain an irreparable loss with respect to the cause of mental health to which he contributed so much. Dr. Wallace was the leading authority in the country on the problem of the feeble-minded. His fame as an institutional head in this field spread to other countries, many of which sent their officials and professional men to Wrentham to study his methods. He was pre-eminent in his understanding of the feeble-minded and their needs, and those responsible for their care in other states frequently turned to him for counsel and guidance when dealing with special problems.

The national committee for mental hygiene, which elected him a member 10 years ago, leaned heavily upon Dr. Wallace for advice and help in all of its work. Since 1924, when he became a member of its board of directors and executive committee, he was especially active, aiding the committee in every possible way in carrying out its program. He was also a trustee of the recently-created American foundation for mental hygiene, and one of the promoters of the first international congress on mental hygiene. He was a tower of strength, never failing to attend meetings if he possibly could come, and always ready to assume any task assigned to him. He was in the vanguard of the movement for mental health, one of its outstanding exponents and a powerful force in its world-wide advance.

We shall remember Dr. Wallace largely for his distinguished service to the feeble-minded. His labors and achievements in their behalf have markedly influenced the course of mental hygiene history in this important field. His outstanding contribution was, perhaps, on the side of the "socialization" of the feeble-minded. He initiated the parole system, now so widely developed in Massachusetts and followed by many other states, which has been such a fundamental step in the socializing process and has so stimulated progress in feeble-minded care.

Dr. Wallace's studies helped greatly to clarify our conceptions of the problem of mental defect and to show the importance of personality factors in understanding it. He did much to lift the stigma unjustly attaching to the feeble-minded by demonstrating that they were not a criminal class; that most of them were leading honest and industrious lives; and that where they were socially maladjusted other factors had to be taken into account besides their mental deficiency. He showed that feeble-mindedness was as much an educational and social as a medical problem and laid upon the community the responsibility for making the right type of institutional, industrial and training provisions to properly deal with it.

That he put his teachings into practice and secured the adoption of his ideas is evident from the record of his accomplishments in Massachusetts and their influence upon work for the feeble-minded in other states. He was not a mere theorist but always advanced his ideas in terms of their scientific soundness and practical application. He was a real progressive, modern in his outlook but with his feet on the ground, always seeking to advance knowledge in his field. His recent plans for the development of a research program at Wrentham reflect his scientific attitude of mind.

One likes to think mostly however, of the humanist in Dr. Wallace, of those qualities of personality which his work as an institutional executive brought out and which were so indelibly impressed upon the Wrentham state school. He had an innate respect for the human personality, whether of the normal individual or of those fortunately endowed by nature. To him the feeble-minded were first of all human beings.

He was peculiarly sensitive to the needs of the children under his care and was quick to resent the slightest neglect of their interests. Their comfort and happiness were paramount in the Wrentham scheme, everything else came next. A remark he made at a recent child welfare meeting in New England exemplifies the spirit of Dr. Wallace and his school. He characterized the personnel of the institution as "a highly sensitive mechanism pulsating with human emotions, to be constantly adjusted in a delicate manner and lubricated freely with the ideals, interests and hopes of the institution, not with rules, restrictions and regulations." Institutional problems to him were simple when they were solved by means of the common denominator: what is best for the children; not by asking "how much does it cost, or how hard a job, or how long will it take, or how disagreeable the task. Strange as it may seem," he said, "that which is best for the children will prove to be the most economical as well as the most pleasant task to perform."

FRANKWOOD E. WILLIAMS,

Medical Director, the National Committee for Mental Hygiene.
New York, July 10.

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ECTOPIA TESTIS PERINEI

By CARL C. NOHE, M.D.

AKRON, OHIO

Among embryological defects, anomalies in descent of the testicle form a very interesting chapter. They are divided into two main groups: (1)—those instances in which the testicle is arrested at some point along its normal course of descent or cryptorchidism; and (2)—those in which the testicle migrates to some abnormal position or ectopia testis. It is the latter class with which we are concerned in this paper.

Some form of undescended testicle occurs in 1 out of every 300 to 500 persons. Ectopia of the testicle is much less frequent than cryptorchidism, and is therefore a comparatively rare condition.

The varieties of ectopia testis are classified according to the anatomic location to which the testicle has migrated, i. e.

- | | |
|---------------------|----------------------------|
| (1) Intra-abdominal | (a) Pelvic |
| | (b) Deep Crural |
| | (a) Superficial Crural |
| | (b) Cruro-Scrotal |
| | (c) Pubo-Penile |
| (2) Extra-abdominal | (d) Penile |
| | (e) Subcutaneous Abdominal |
| | (f) Perineal |
| | (g) Transverse Ectopia. |

The most common types of ectopia are perineal and crural.

The occurrence of undescended testicle, ectopic testicle or misplaced testicle has been ascribed to many causes, among them being (a) reversion to type; (b) foetal peritonitis, causing adhesions; (c) short mesorchium; (d) deficiency in the arching fibres of the internal oblique muscle and a weakness of the conjoined tendon which allow retraction of the cremasteric muscle; (e) unequal contraction of the gubernaculum on the testicle according to which tail of the gubernaculum is best developed. (John Hunter, Lockwood.)

Eisendrath has determined five common directions of gubernacular pull: (1) superficial inguinal; (2) pubic; (3) femoral; (4) scrotal; and (5) perineal.

We are inclined to this Hunter-Lockwood-Eisendrath explanation because in the two cases we have treated, each had a strong fibrous band (as heavy as the normal aponeurosis of the external oblique) holding the testicle in its abnormal site.

We believe that the poor results following operations for this condition are due to the performance of the operation on patients either too young or too old (after puberty), and also to rough handling during the operation and to improper postoperative care.

If done properly, the operation is delicate and time consuming. Most failures are due (1) to operating too early, (2) to operating too late (after puberty), (3) to lack of careful handling of the structures, (4) to injury of the testicle or cord during the operation by tearing and gauze rubbing, instead of sharp dissection, resulting in post-operative orchitis and testicular atrophy, (5) to poor judgment in selecting the type of operation required.

Between the ages of 6 and 12 years is the best time for the patient to be operated upon because these structures, delicate in the adult, are more so in the boy.

It is to be regretted that a great many abnormally placed testicles are still being thoughtlessly excised. Statistics show that about one person in each five hundred has either undescended or ectopic testicle. The right testicle is most often involved. Some of these cases are accompanied by hernia. Some authors claim late descent causes hernia.

It is thought by most authors that undescended and ectopic testicles undergo atrophy after puberty, hence the dictum has been enunciated that they should be operated on before the child is 12 years old. It is also thought that a misplaced testicle is more liable to degenerative disease, such as tuberculosis, sarcoma, carcinoma, etc. Certainly the abnormally placed testicle is more exposed to trauma, and at puberty the increase in its size incident to the onset of the sexual cycle, will crowd it in its already close quarters.

Before the age of six, these structures are so gossamer-like that the chance of dangerous trauma during transplantation is much greater than it is a few years later. If the operator, however, uses the utmost gentleness and care, there seems to be no reason why these cases cannot be operated on successfully before six years of age. If the presence of a hernia be suspected in babies, it is wise before ordering a truss be sure that the inguinal mass is not a testicle, as this structure does not take kindly to pressure. We never advise a truss for children, as it gives a false sense of security and increases the difficulties of operation in the future.

We are aware that many cases of undescended testicle do not come to the surgeon within the age limits specified above. There is no excuse, however, for overlooking the condition as the presence of a "conical scrotum" should remind the examiner to palpate.

In cases seen after puberty, a guarded prognosis should be given as to the success of transplantation of the testicle, so far, at least, as spermatogenesis is concerned.

Previous to 1881, orchidopexy was done infrequently and with but poor success. In 1881, Schuller devised and in 1899, Bevan perfected an operation which with but few minor changes is used today. The secret of success in this operation is to do it in as simple a manner as possible. Rarely resect the blood vessels to lengthen the cord, and very seldom transplant the cord itself.

Although my last case of ectopia testis perinei has only recently left the hospital, I had seen the patient at intervals since he was two months old. Examination of July 14, 1930, revealed a well-nourished boy, seven years of age, and normal in all respects except (1) typical conical scrotum, (2) right testicle absent from scrotum, (3) mass the

size, shape and consistency of testicle in the perineum, (4) right inguinal hernia, (5) phimosis. The left testicle occupied its natural site and the left inguinal region appeared to be perfectly normal. An operation was proposed and he was admitted to the City Hospital the following day.

The operative technic used in this case, was Mixter's modification of Bevan's operation, viz:

1. The sac was dissected free from the cord and cut through one inch above the external abdominal ring.

2. The proximal side of the sac was ligated high and was fastened snugly up under the muscles.

3. A plain catgut suture was introduced through the upper end of the distal portion of the sac on each side of the cord at the point of section, so as to make the sac fit snugly around the cord and form a tunica for the testicle.

4. The testicle was dissected free from its bed in the perineum by cutting through the gubernacular fold at the bottom of this pouch.

5. A new bed was now made in the scrotum and the mobilized testicle placed in this pouch.

6. To prevent subsequent ascension of the testicle, it was anchored in its new situation. A number 2 braided silk suture was first passed through the proximal portion of the gubernaculum and its two ends, which had been made to emerge on the cutaneous surface of the scrotum, were tied over a roll of gauze.

7. The perineal pocket was shut off from the scrotum by a purse-string suture of number 1 chromic catgut.

8. The inguinal canal was closed after the manner of a radical cure for oblique inguinal hernia without transplantation of the cord. Number 2 (40 day) chromicized catgut was used for the buried sutures and silk in the skin.

9. The wound was sealed with a thin layer of gauze soaked with collodion, a scrotal support (to be worn for 6 months) was applied, and a circumcision was performed.

10. The patient was returned to bed, was placed in the semi-flexed position, and was kept in bed between three and four weeks.

SUMMARY

1. The best time for operation on ectopic testicles is between the sixth and twelfth years, as the testicular tissues before the former age, are too delicate to withstand the trauma associated of necessity with such interference, while on the other hand if the condition is allowed to persist until puberty, spermatogenesis will fail to develop in a goodly proportion of these patients.

2. The operation should be done with a minimum of trauma by the use of sharp dissection instead of tearing the tissues asunder with a finger or gauze pledgets, and in each case by recourse to the simplest possible type of operation.

3. After the operation the patient should be kept abed three to four weeks in the "semi-flexed position," and the scrotal contents should be adequately supported for three to six months postoperatively.

4. Postoperative straining should be guarded against by circumcision, when needed, and by regulation of the bowels, when necessary, with a mild lubricant, e. g., mineral oil.

5. Orchidectomy is warranted only in the presence of neoplastic disease, gangrene, inflammation, or where the testicle has been so much damaged as to preclude any hope for its development or regeneration.

6. A cord that is long enough to reach the perineum, is usually long enough to reach the scrotum without much difficulty; if the cord must be lengthened, the veins should be resected first, and the arteries only as a last resort, since complete division of the spermatic artery may result in atrophy of the testicle as the vessels of the vas alone provide but poor nourishment to the testicle.

ENDEMIC TYPHUS

By CLAUD SMINK, M.D.

BALTIMORE, MD.

The thought of typhus fever is almost invariably associated in our minds with a repellant picture of filth, famine, war, overcrowding and unsanitary conditions, so that we come to feel that with our modern urban sanitation, universal bath tubs, and the personal hygiene which is partially incident to the wealth of our country, we are superior to this disease. And yet, there were one hundred and thirty-six cases reported in New York City, and thirty-one in Baltimore during the past decade. If this number of cases of a rare disease, hard to diagnose, except in epidemics, and often mistaken for other diseases, was reported, the incidence must be considerably higher, because there is no way of telling the number of cases that escaped detection. Philadelphia reported no cases and from Boston I received no reply to my query. To my mind this again suggests failure of diagnosis on the part of Philadelphians, and the literature indicates that there were a number of cases in Boston.

This disease, then, is not confined to Central Europe, Ireland, North Africa and Mexico as so many text books have stated, but is endemic, in a mild or unusual form in most of the United States. Since the publication of Nathan Brill's masterly description of "An Acute Infectious Disease of Unknown Origin and Unknown Pathology" in 1910, this disease has been written about and described in many parts of North America. In New York it is Brill's disease, in the South Atlantic States it is endemic typhus, in Mexico it is tabardillo and along the Rio Grande Valley there is much confusion as to the relationship of the condition to Rocky Mountain spotted fever; while tropical typhus, first recognized in the Malay States, and described by Fletcher and Lesser in 1926, is evidently another name for the same condition.

Endemic typhus is peculiarly different from epidemic typhus in that there is rarely more than one member of a family attacked; the detection of lice on the patient or his associates is so rare as to be negligible; hospital attendants seldom, if ever, contract the disease, although no special isolation is undertaken; while epidemic typhus

occurs in cold countries or the cold months of the year, and endemic typhus occurs in the warm months and disappears during the winter. Maxcy says that "Endemic typhus is not associated with lousiness" and feels that it is transmitted by some other means. Endemic typhus is rarely fatal while epidemic typhus has a high mortality.

The relationship of the two is born out by the marked similarity of the symptoms, the positive Weil-Felix tests, in both the nearly identical rash, and the similarity of the scant pathology. Mosser, in his description of tabardillo or Mexican typhus, however, states that the virus from the endemic type in Georgia and Alabama produces the same lesion in the tunica vaginalis testis of the guinea pig that is produced by tabardillo, and that this lesion in the tunica vaginalis is not produced by the virus of the New York variety or Brill's disease proper. He further states that the lesion produced by the Southern variety in the testicles of guinea pigs resemble strongly those produced by the virus of spotted or Rocky Mountain fever. Since both of these diseases give the Weil-Felix reaction and their symptoms and eruption is similar, the diagnosis is, no doubt, confusing and may be, at times, impossible. Mosser further states, however, that "A comparison of the smear from infected lice convinced me that the micro-organism constantly found in the tunica of our animals is really *Rickettsia prowazeki*." It is probable that the tick, flea and field mouse, through their contact with cattle, all may play a part in the transmission of the endemic form as Fletcher found that "Tropical typhus has a special tendency to attack cattle keepers." I think from the literature, the tendency is to feel that epidemic typhus depends on lice for its transmission; while endemic typhus may or may not do so. It seems to me that it would be impossible to be sure that one had not picked up one louse and been bitten by it, and one is all that is necessary.

The various theories as to the method the louse uses in infecting humans are interesting. It may be that the louse regurgitates the virus from his oesophagus while feeding, or, as the faeces of the parasite contain the virus, it may be introduced by scratching a place bitten by and contaminated by the louse, or the louse may contaminate his mouth with faecal matter before biting the human.

The intracellular organism described by Ricketts and now known as the *Rickettsia prowazeki* is generally recognized as the specific

cause, although it has not been grown on culture. It is always present, however, and an infected louse may transmit the disease to a monkey. The disease has also been transmitted from one monkey to another by blood injections. Wolbach has kept the virus alive on tissue cultures.

The pathological lesions produced by the disease are few and not particularly distinctive. The spleen is enlarged sometimes and the rash is caused by perivascular and vascular infiltration. There are proliferative lesions in the small blood vessels of the skin, muscles, and brain. Many small thrombi occur here. This may explain the encephalitic symptoms as well as the skin petechiae.

The symptoms of the endemic type resemble the epidemic form and are about as follows.

There may be a prodromal period of malaise, languor, anorexia, indefinite pains, some headache and perhaps slight fever. The disease begins usually with a sudden chill or chills, and severe headache. Vomiting and nose bleed may occur. The headache is so severe that the patient may complain of it alone. Neuro-muscular or localized pains are common and I shall show how this localization tended to obscure the diagnosis in one of our cases. Fever is high and exhaustion is so great as to prostrate the patient. The face is flushed, the pulse fast, the spleen palpable in about 50% of the cases, and in the tropical form there is much injection of the conjunctiva. Bronchitis is so common as to be the rule. The tongue is dry and the mentality may be good at first but rapidly deteriorates.

Usually sometime between the third and eighth day, the eruption appears, on the chest, neck, back, abdomen and extremities. At first this is macular, with a dusky appearance, and fusing in places, resembles measles. The bronchitis has gotten worse and the cough is irritating. As the disease progresses the skin lesions assume a petechial appearance due to extravasation of blood and no longer disappear on pressure. The mental state is important in the prognosis as the disease seems to be more severe if the delirium, subsultus tendinum and signs of mental deterioration are more marked. There may be cervical rigidity and retraction of the head but the cerebrospinal fluid is not abnormal except perhaps for a slight increase in cells.

In the second week the fever is high, with very marked toxæmia until the twelfth to the fourteenth day, when it falls suddenly and in twenty-four to forty-eight hours the patient says he is well and if he has remained conscious, exults in the relief from headache.

Death may result from broncho-pneumonia, cardiac failure, toxæmia, or extensive cerebral involvement. In the endemic form the fatalities are rarely greater than 2%. The Weil-Felix reaction occurs late, is very nearly constant, and consists in the agglutination of *Proteus Bacillus* X 19. The blood shows no great change but marked leucocytosis is unfavorable. The urine shows only the changes incident to any fever. The blood pressure is seldom up to normal.

The diagnosis before the eruption is apparently impossible. Later it becomes a question of exclusion. It is differentiated from pneumonia, by the physical signs, X-ray of chest, leucocytosis, rusty sputum, etc.; from typhoid by the Weil-Felix reaction, different eruption, Widal (although that may be positive, according to some writers, in typhus), the blood culture, abrupt onset, and, excision of a piece of skin for microscopic examination in typhus. Rocky Mountain spotted fever is clinically the twin of typhus and the locality, in the northwestern United States, must be considered. Guinea pig scrotal lesions help. It is diagnosed from meningitis by the spinal fluid; from influenza by time and the Weil-Felix reaction; from scarlet fever, by the throat, eruption and leucocytosis; from malaria and relapsing fever by examination of the blood or the therapeutic test; from measles by the coryza and Koplik's spots; from smallpox by the change in the rash produced by the lapse of a few days, and from encephalitis by the slow onset, the lower fever and shorter period of fever. This latter seems to me to be difficult especially if a spinal puncture is not done.

In the prophylactic treatment, only one measure, need be mentioned. That is the prevention and elimination of lice. At the same time, one of our cases, which appeared typical, gave no history of lice but many tick bites and in view of the apparent obscurity regarding the transmission of the endemic form, the tick from cattle, rats, mice and other animals must be considered.

There is no medicinal treatment and all measures must be directed to the alleviation of symptoms and the support of the patient. It seems futile to discuss this with present day medical men.

I should like to report briefly one of our cases at St. Joseph's Hospital, Baltimore, in which the diagnosis was obscure and the result was fatal, apparently from encephalitic changes.

Mrs. R. T., Baltimore, Maryland, age 34, married, American, housewife, referred by Dr. A. G. Webster, was admitted to St. Joseph's Hospital on May 17, 1930 in the department of gynecology because of severe lower abdominal pain and tenderness. Examination by the gynecologist revealed no pelvic lesion and she was referred to the medical side for diagnosis. On May 9, 1930, she had malaise and aching all over her body. On May 12, 1930, she had chills followed by fever with pains in her abdomen, was nauseated, and vomited. The pain later localized in the epigastrium. There was a marked cough and she spat up purulent material and had a severe pain in the right chest. She was constipated. Her menstrual history was normal. These symptoms persisted. The patient appeared daily more toxic, the fever continued to range from 100 to 102 F., and the headache remained obstinately resistant to treatment. As the pain and tenderness had definitely localized in the lower right abdominal quadrant, she was sent to the hospital, on May 17th, for diagnosis.

The family history was of no importance. The past history was negative except that on May 1, 1930, she had gone to Hanover, Maryland, and had taken water from a well that had been condemned. Her only previous illness had been childbirth, which was normal.

On admission the physical examination revealed a white female, well nourished, with flushed cheeks, some erythema of the neck and chest, temperature 103 F., pulse 110, and respirations 40. She appeared toxic, cerebrated slowly and slept much. The respiration was rapid. The skin was flabby as though she had been fat. The scalp was negative. The pupils were equal and reacted to light and accommodation. There were no thyroid eye signs. Extraocular movements were normal. The sinuses were negative to pressure. The nose was normal. The teeth were in very bad condition with much pyorrhoea and badly cared for dentistry. The tongue was dry. The throat was glazed and red, and the tonsils were small and buried. The ears were negative and the neck was negative for rigidity, glandular enlargement, palpable thyroid or tracheal tug. The chest was well shaped, but its excursion was limited on the right side. The breath sounds were distant at the right base, and scattered bronchial râles were heard throughout the chest with occasional pleuritic râles in the right base. Percussion was negative except for lessening of resonance in the right base. X-ray of lungs showed nothing.

The heart beat was regular and rapid with a soft systolic blow at the apex. The area of cardiac dullness was normal; the point of maximum impulse was normal; no shocks or thrills were felt and the blood pressure was 130 over 66.

The abdomen was tender over the entire right side but no organs were palpable. Liver and splenic dullness were normal. There was no abnormal distension. The extremities were not oedematous and all reflexes were present and normal except the abdominal which was missing. The patient's mentality was cloudy although she answered questions intelligently but slept restlessly most of the time.

The urine showed a small amount of albumin but was otherwise normal. Leucocytes were 6,600., polys 72% and haemoglobin, 70%. The blood Wassermann test was negative. The non-protein nitrogen was normal. The blood sugar was normal. The Widal reaction was negative for typhoid and paratyphoid. The blood culture was negative. A culture of the urine was negative for typhoid. A culture of the stool was negative for typhoid. The

blood agglutination tests were negative for tularemia and *B. abortus* in all dilutions.

The condition remained essentially the same for two days except that the toxæmia became more marked and the drowsiness and delirium increased; defecation and urination became involuntary, and when spoken to she answered slowly and sometimes irrelevantly, unless she was fully aroused. She resisted examination as though it were painful but lapsed into semi-coma immediately if undisturbed.

Now, an irregular, macular rash began to appear on the chest, which soon extended to the back, abdomen, neck, legs and arms, and was most marked over the flexor surfaces. This eruption was irregular, discrete and disappeared on pressure. It did not itch. The spleen was now palpable; the liver was enlarged and gradually the patient began to show irregular pupils and a contraction of the left sternomastoid muscle, which gave her a modified appearance of torticollis.

There was now a cervical rigidity, slight nystagmus, a right internal squint and increased reflexes. The eruption began to assume a petechial character in places, especially on the legs and arms and there was considerable pulmonary congestion. The temperature remained continuously between 101 and 104 F. The pulse became rapid; and the heart sounds weaker, and it was now necessary to feed the patient by tube and resort to all stimulation possible.

The blood count rose to 16,000, with 89% polys. The blood culture remained negative and the spinal fluid was still clear, under slight pressure with a normal cell count, slight trace of globulin, no pellicle and negative to culture. Examination of the eye at this time showed intraocular pressure and external rectus paralysis.

The blood now showed a positive agglutination with *Bacillus proteus* X 19 in dilutions of 1 to 400, and the Widal reaction was faintly positive.

In view of these findings, a diagnosis of typhus fever was made. This was confirmed by Dr. Thomas R. Boggs, who had seen much of this disease in the near East.

In spite of heroic stimulation the patient died on May 31, 1930, showing symptoms of cerebral irritation to the last.

Unfortunately we could obtain only a partial autopsy and could not examine the brain. The findings were fatty degeneration of the liver, acute splenic tumor, diffuse hemorrhagic nephritis and perivascular infiltration of the skin.

This case occurred prior to the small epidemic which we had in the State and we were not as alert for the disease as we were later. The onset was not so abrupt as is usual and the cerebral symptoms overshadowed all others. There was no possible history of lice obtainable and the season was warm. The outcome was fatal which is unusual in this type. One feels that the fatality was probably due to the vascular cerebral lesions, and the late paralysis and cerebral symptoms are explainable in the same manner.

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TYPHUS FEVER
REPORT OF A CASE OCCURRING IN QUEEN ANNE'S
COUNTY, MARYLAND, IN JUNE, 1930

By C. H. METCALFE, M.D.
SUDLERSVILLE, Md.

AND

R. G. BEACHLEY, M.D., DR. P.H.
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The patient was a white male, 15 years old, living near Sudlersville, Md. He was taken ill on May 17, 1930, with a sudden chill, vomiting, prostration and pain in the back and in the neck. Dr. C. H. Metcalfe, the family physician, was called and first examined the boy on May 20th. Upon this examination he found the patient had a temperature of 103 F., pulse 120, and considerable pain in the back and in the neck. The rash which was just appearing at this examination, consisted of a crop of slightly elevated dull red macules that later became petechial. Between the macules there was a dusky red mottling, which had the characteristic "mulberry rash" appearance.

It was first thought that the boy was suffering with measles; but, as it was learned that he had had measles in 1927, a recurrence seemed improbable. Typhoid fever was then suspected. However, a Widal test taken on May 23rd, and another on May 28th, were negative. The patient had no abdominal or intestinal symptoms characteristic of typhoid fever. As the eruption became more pronounced, Dr. Metcalfe made a diagnosis of typhus fever.

The fever continued to range between 102 and 104 F., with slight morning remissions until June 2nd, when I was called in consultation. Examination at this time showed the characteristic rash which had become petechial. The "mulberry rash" appearance had faded somewhat. The rash extended from the hair-line of the head over all of the body, including the palms of the hands and the soles of the feet. The boy complained of considerable pain in his back and there was some rigidity of the muscles of the neck. At the examination on

June 2nd, there were a few moist râles at the base of the right lung. These cleared up during the next few days.

On June 3rd, Dr. Caleb Rohrer, of the State Department of Health, was called in consultation. At the time of this visit, the rash had begun to fade somewhat, the temperature was 101 F. and the patient still complained of pain in the back and in the neck. Dr. Rohrer pronounced the case typhus fever. A specimen of blood taken on June 2nd, and examined at the Hurlock Laboratory, gave agglutination for typhoid and paratyphoid types A and B. Blood taken on June 3rd and examined in the laboratory of the State Department of Health in Baltimore, gave a positive Weil-Felix reaction in dilutions of 1 to 640 for typhus fever. On inspection of the body, a small sore was found on the calf of the right leg which had first made its appearance about May 14th. This sore finally developed into a pustule and scabbed over. The healed area was still present on June 11th. This sore may or may not have been the portal of entry of the infection.

Typhoid fever was at first considered because of the continued fever. However, there were none of the abdominal symptoms seen in typhoid fever and no development of characteristic rose spots nor any palpable enlargement of the spleen. A blood culture and three Widal reactions were negative. The sudden onset in this case moreover is unlike typhoid. The rash was highly characteristic of typhus. The duration of the disease while slightly longer than is usual in typhus was much shorter than the average duration of typhoid fever. The strongly positive Weil-Felix reaction adds further certainty to the differentiation.

The macular eruption was at first somewhat suggestive of measles. Koplik's spots (small bluish white spots surrounded by a reddish areola on the mucous membrane of the cheeks and lips) and the crescentic dark-pink macules on the face which are characteristic of measles were not seen in this patient. Dr. Metcalfe moreover had seen this boy in a definite attack of measles in 1927.

There are definite similarities between typhus fever and Rocky Mountain spotted fever. The sudden onset, nervous symptoms and the character of the eruption are very alike. Spotted fever however, is practically limited to certain valleys of the Rocky Mountains and has not yet occurred in the Eastern States.



PICTURE OF PATIENT SHOWING CHARACTERISTIC RASH

Various forms of septicemia with a purpuric eruption might be confused at times with the later stages of typhus; and so likewise might a case of epidemic meningitis with petechiae in the skin. Careful physical examination; blood cultures and if necessary, lumbar puncture will clear up such difficulties.

SOURCE OF INFECTION AND MODE OF TRANSMISSION

Although the specific organism of typhus fever has not yet been identified, various theories have been suggested as to the means by which it is contracted. It has been generally accepted that it is transmitted through the medium of fomites. This applies to such articles as clothing and bedding which are believed to convey the organism of the disease in an active state from one person to another. This theory has been handed down for a number of years with no definite scientific proof to sustain it, but it has been accepted as the ordinary or common means by which typhus is transmitted. In recent years careful investigation has shown the fallacy of this belief, and our present knowledge of this subject justifies the statement that clothing and bedding are the media of infection only in rare instances if at all and that typhus is transmitted by the louse and possibly by other insects. Investigations by Goldberger and Anderson indicated that typhus fever is transmitted by the *pediculus corporis* and the experiences of the World War fully confirmed this. More recent investigations indicate that the common wood-tick found in this section of the country, is in all probability a carrier of the disease. The fact that many cases are seen in families not associated with lousiness, tends to confirm the incrimination of the tick as a very likely vector of the disease. Maxcy of the United States Public Health Service states that "A study of the disease shows the occurrence of cases that are sporadic-scattered as to place and time. In many places the occurrence seems to be a chance happening which may not be repeated again for many years. In many instances all attempts to trace the origin of one case as to contact with a preceding case have been unfruitful."

In our case a careful search was made for body-lice. The hair of the patient's head was inspected for nits. Nothing was found to indicate the presence of any kind of lice or vermin which might have transmitted the disease. The home was very clean and everything on the premises was in a sanitary condition.

The house where the patient lived, is situated near a large woods and the boy was accustomed to spend some of his time in and about the woods. It is, therefore, quite possible that he was bitten by a tick. Ticks are plentiful at this season of the year. He gave a history of having played a part of the day in the woods adjoining his home just previous to his being taken sick on the 17th. On making an inspection of his body it was found that he had a small sore on the calf of his left leg. Upon questioning his mother it was elicited that he had been bitten by some insect at this point several days before the onset of his illness. This place became very much inflamed and finally broke down in the center forming a small pustule, which later scabbed over. No other lesion was found on the body. This may or may not have been the point of infection.

The father is a peddler of extracts and other kitchen supplies, going from farm to farm selling his wares. It is possible that in his travels he brought an infected body-louse into his house and thus transmitted the disease to his son. However, no lice or other fomites were found to bear out this surmise. There was no history of any visitors in his home previous to the boy's illness. He had not visited away from home recently.

TREATMENT

The treatment was entirely symptomatic; forcing of fluids, light diet, mild aperients, and the use of antipyretics for the fever. The patient was kept on infectious precautions. The disinfection of clothing and bedding by soaking in 1-500 bichloride of mercury solution was recommended as well as the fumigation of the room with sulphur.

SUMMARY

This case was undoubtedly a typical case of sporadic typhus fever, the source of which will never be definitely established. The sudden onset with the rapid rise in temperature; the characteristic rash which did not have the appearance of any of the other exanthematous diseases; the fact that the patient had had measles in 1927; the three negative Widal tests; the continuation of the rash two weeks after the onset of the disease; the typical temperature throughout the course of the malady; and finally the agglutination of the blood for typhus fever in a dilution of 1-640 by the Weil-Felix reaction conclusively point to a positive diagnosis of typhus fever.

A CASE OF ATYPICAL TOXIC GOITRE WITH RECURRENT PULMONARY EDEMA

By A. FERDINAND RIES, M.D.
BALTIMORE, MD.

A large proportion of cases of thyroid disease manifest themselves in a very frank form. Others, however, are more or less masked, as in many cases of hypothyroidism. In the same way, not a few cases of hyperthyroidism or toxic goitre are so atypical that they may lead to great confusion in diagnosis, especially when other conditions such as cardiovascular disease, are associated. The circulatory symptoms in the case to be cited so masked the severe hyperthyroidism and were in themselves so unusual as to justify the following report.

REPORT OF CASE

Mrs. E. L., 43 years old, married, entered the hospital as an emergency case on November 22, 1929. She was unconscious, very cyanotic, with a heart rate of about 140, and breathing of the sterno-cleido-mastoid variety. The immediate treatment consisted in the administration of morphine and atropin, amyl nitrite, nitro-glycerin, and oxygen. About 500 cc. of blood were taken from the arm. Following the bleeding digifolin was given in doses of 1 ampule every 4 hours for 4 doses. The blood pressure was 280/140.

Family History—Father living, but has had 2 strokes of paralysis. Mother living, but has high blood pressure. Two brothers and one sister living. One brother died of pneumonia at age of 40.

Past History—Had measles, scarlet fever and whooping cough when a child. Partial removal of left breast 9 years ago because of a tumor, presumably benign.

Habits—Drinks 9 cups of tea a day. Up until 6 months ago drank 6 cups of coffee.

Menstrual—Menstruated several weeks ago. Previous period 4 months before. Duration 2 days, scanty, no pain.

Present Illness—Began 4 years ago, with attacks "after working around house," or after any emotional disturbance. The present attack began at 4 P. M., November 22. She felt a lump in the epigastrium and her heart began to pound and "get larger," as she says. She had sharp pain in the precordial region and began to cough and get short of breath. On the way to the hospital she lapsed into unconsciousness. This attack was typical of several others she had had. There were 3 or 4 attacks the first year, but their frequency has increased. This year (1929) she has had 12 attacks and these have been accompanied by unconscious episodes. There is a cough with the attacks, a pinkish foamy material being brought up, but there is no frank haemoptysis. Three years ago, the weight was 200 pounds, and the present weight is 130 pounds.

Alimentary—Pain and fullness in epigastrium just before attacks. Bowels constipated.

* From the Medical Clinic, South Baltimore General Hospital, Baltimore, Md.

Cardio-Vascular System—Precordial pain with attacks, also pounding and throbbing of heart. Oedema of ankles once, shortly after Christmas, 1928. Dyspnoea and orthopnea, the patient sleeping on 3 pillows.

Genito-Urinary System—Nocturia (2 or 3 times each night).

Nervousness—Sleeps poorly. Uses hypnotics.

Impression—1. Cardio-vascular-renal disease and hypertension.

2. Paroxysmal hypertension.

Physical Examination—Patient is lying in bed. She is fairly well nourished, but looks ill, and is cyanotic and dyspneic. The pupils are dilated, but react to light and accommodation. The teeth are decayed, with marked pyorrhea. The tonsils are small. The neck is essentially negative. The thorax is symmetrical, with good expansion. The breath sounds are distant with numerous moist râles. Some impairment on percussion in left base. The heart is enlarged to the left, with slight increase also to right. Rate 100. The B. P. is 280/140. There is a soft systolic murmur at the apex. The liver is somewhat enlarged. The extremities are negative. The reflexes, superficial and deep, somewhat retarded.

The chief developments, with laboratory findings during the patient's stay in the hospital were as follows:

November 22, 1929—Blood Chemistry: Sugar 200; Urea 31; N. P. N. 33; Creatinin 1.4. Blood exam.: Hgb. 80% RBC 4, 890,000; WBC 9,400.

Large lymphocytes..... 6%

Small lymphocytes..... 26%

Polymorpho-nuclear neutrophils. 68%

Urine examined numerous times.

Albumin—trace; few pus cells; few RBC; occasional cast.

Sp. Gr. 1017, 1017, 1022, 1018, 1010.

November 23, 1929—B.P. 220/124.

November 24, 1929—B.P. 288/150. Excited and nervous.

November 25, 1929—B.P. 280/140. Basal Metabolic Rate 81.

Sugar 152; Urea 47; N.P.N. 44; Creatinin 1.75.

X-ray (fluoroscopic). Marked dilatation of aorta, marked enlargement of heart, small amount of fluid at left base.

November 26, 1929—B.P. 240/150.

November 29, 1929—B.P. 284/142.

December 2, 1929—Basal Metabolic Rate 58.

December 5, 1929—B.P. 282/148.

December 9, 1929—Basal Metabolic Rate 51.

December 12, 1929—B.P. 270/134.

December 13, 1929—Patient allowed to sit up. B.P. 280/152; Basal Metabolic Rate 51.

Loss of weight of about 20 pounds while in hospital.

Discharged December 21, 1929, improved, with directions to take 3 drops of Lugol's solution after meals.

The patient was readmitted on January 8, 1930.

January 8, 1930—Patient again cyanotic and dyspnoeic. B.P. 222/156. Patient unconscious and sterno-cleido-mastoid breathing. The pulse was rapid but regular (140).

January 11, 1930—Numerous râles in left chest. Friction rub in left 3rd interspace, 2 inches from mid line.

February 5, 1930—Scheduled for extraction of tooth, but at sight of instruments suddenly went into an attack. Cyanotic (black). Pulse 150. Skin cold. Patient vomited and became unconscious. Breathing again of sterno-mastoid variety.

Vaso-dilatory drugs given, oxygen; bled. In 20 minutes marked improvement. B.P. 258/140 to 234/118.

January 9, 1930—Urinalysis: Trace albumin; few RBC, occasional hyaline cast, few pus cells.

Blood exam. Hgb. 70%; RBC 4,110,000.
 Small lymphocytes.....20%
 Large lymphocytes..... 4%
 Polymorpho-nuclear neutrophiles.76%

Urea—37.

January 10, 1930—B.P. 220/140.

January 13, 1930—X-ray. Great deal of motion on account of patient being unable to hold her breath. Colon is somewhat dilated, but regular, with no filling defect.

January 15, 1930—X-ray. Consolidation of whole right upper lobe, with strong suspicion of pneumonia. Also slight infiltration of left upper lobe, and heart enlarged.

January 27, 1930—WBC 6,800.

February 10, 1930—Basal Metabolic Rate 75.

February 15, 1930—Basal Metabolic Rate 80.

February 19, 1930—Trace albumin; few RBC, occasional hyaline cast, few pus cells.

February 20, 1930—Albumin trace, RBC., granular casts, few pus cells and epithelial cells (numerous).

Blood exam. Hgb. 80%; RBC 4,020,000; WBC 9,600.
 Large Lymphocytes..... 8%
 Small lymphocytes.....20%
 Polymorpho-nuclear neutrophiles.72%

Urea 32; N.P.N. 30; Creatinin 1.79.

February 21, 1930—B.P. 268/128.

February 22, 1930—Phthalein 65 p.c.

February 22, 1930—Sputum—2 specimens—negative.

February 25, 1930—B.P. 238/122.

March 7, 1930—Another attack 9.30 to 12.45. Pulmonary oedema and death.

Partial Autopsy—No free fluid in pleural or pericardial sac. The lungs are typical of pulmonary oedema. The heart markedly adherent to pericardial sac, and heart muscle hypertrophied with a little thickening of the aortic valves and a little roughening of the mitral valves. The peribronchial lymph-nodes slightly enlarged. The thyroid gland normal in size; on cross-section appears to be finely nodular. Gall bladder bound down with adhesions and containing a large stone. Liver of normal size with no gross pathological changes. No gross pathological changes in stomach. Meckel's diverticulum present about 15 inches from caecum. No free fluid in abdomen. Adrenal normal in size, with no gross change. Kidneys appear to be normal grossly. Uterus shows one small fibroid. Numerous small follicular cysts of right ovary.

Microscopic—The most significant findings were in the thyroid and the kidneys. The former, according to the pathologist's report, showed definite hyperplastic changes, suggesting "a hyperactive gland after iodine therapy." The kidneys showed a chronic glomerulo-nephritis, while the spleen, lungs, liver and adrenals showed chronic passive congestion.

DISCUSSION

The case therefore is one of a woman at the menopausal age (43) and with a marked hypertension who for four years had suffered increasingly with severe attacks of paroxysmal dyspnoea associated with tachycardia, cyanosis, and often with evidences of edema of the lungs. For a year or more these attacks have often been associated with unconsciousness.

In the physical examination the chief findings were the cardiac enlargement, the hypertension, and the intense nervousness and apprehensiveness of the patient. The thyroid was not enlarged.

The persistently high metabolic rate pointed nevertheless to hyperthyroidism as an important factor in the pathogenesis of the condition.

The blood pressure was very variable though always high. When taken during the attacks it was usually found at its higher levels. The attacks were accompanied by intense dyspnoea, cyanosis, and evidences of acute congestion and sometimes frank edema of the lungs. They yielded to the vasodilator drugs and to venesection. It is reasonable to suppose therefore that the attacks were brought about by yielding of the left heart to the overload of the hypertension and were relieved by methods which reduced this pressure.

The usual clinical picture of hyperthyroidism was quite masked in this patient by the unusual circulatory symptoms. Since entirely similar attacks have been frequently described in patients with hypertension without hyperthyroidism, and especially in hypertensive patients with coronary disease, the attacks in this patient cannot fairly be ascribed to the hyperfunctioning thyroid. The patient's intense nervousness and restlessness played so large a rôle in initiating the attacks, however, that it is probable that the hyperthyroidism which lay at the base of this nervous state must be considered as a most important aggravating factor both in increasing the irritability of the vaso-motor mechanism and in decreasing the myocardial resistance.

ABSTRACT
NEWER DEVELOPMENTS IN THE PHYSIOLOGY
OF THE
FEMALE SEX CYCLE*

Radical readjustments must be made in our views as to the physiology of menstruation because of important new developments in this field. There is little doubt that in lower animals the sex cycle can occur independently of ovulation. The best evidence along this line has come from observations on monkeys, which menstruate much as do human females. Menstruation without preceding ovulation is certainly not the rule in women, but there is reason to believe that it occurs at times, though the associated endometrial cycle would naturally be different in such cases. Even if preceding ovulation is the rule, it is not certain that the two are related in the nature of cause and effect.

The time has come when the doctrine of the "primacy of the ovum" in the regulation of menstrual periodicity must be abandoned, though it may give some of us a wrench to do so. The evidence brought together in this paper, however, makes it no longer tenable. There is no reason to believe that any other constituent of the ovarian structure is any more important in this respect, but there is evidence to suggest, though not to demonstrate, that the pituitary may, by the probable periodicity of its own function, be the regulator of the menstrual rhythm. This, however, carries the problem only one step towards its solution, for it raises the question of what determines the periodicity of the pituitary, and still leaves the question of menstrual periodicity one of the mysteries of life.

The dual nature of the ovarian secretion has been definitely established, the "clincher" having been recently applied by the demonstration, by Corner, of an active corpus luteum extract, with properties in some respects antagonistic, in others supplementary, to those of the already well recognized ovarian follicle hormone. Evidence has thus accumulated to indicate that the latter is not to be regarded as the "female sex hormone." For that matter, the anterior pituitary secre-

* Paper read by Dr. Emil Novak before University of Maryland Biological Society at its November, 1930 meeting.

tion appears to play an even more fundamental rôle in sex physiology. For various reasons, especially the fact that the characteristic secretion of the corpus luteum has very different properties from those of the follicle and the placenta, the term "gestational gland," to include these three structures, is incorrect, and should be abandoned.

The most important recent contribution to sex physiology, and the one which promises most in its future practical applications, is the discovery that the anterior pituitary constitutes the "motor" of the ovary. The surprising effects of implantations of the anterior lobe on the growth and maturation of the follicular apparatus open up a vast field of possibilities. Although the discovery of the follicle hormone has as yet yielded almost nothing from a therapeutic standpoint, there is reason to feel that the discovery of the underlying rôle of the anterior pituitary secretion may, in the future, be more productive of results in the treatment of disorders of the sex cycle.



HENRY STEVENSON

1721—1814

A Founder of the Medical and Chirurgical Faculty of Maryland

BULLETIN

OF THE

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SCHOOL WILL HONOR DR. JOHN C. HEMMETER

Dean Rowland has announced that a chair of physiology will be established at the University in honor of Dr. John C. Hemmeter. Already approximately \$10,000 have been raised for this purpose and a committee headed by Dr. Rowland is engaged in raising this amount to at least \$100,000. Besides Dr. Rowland the committee includes: Drs. John Evans, William J. Mayo, Julius Friedenwald, Randolph Winslow, J. M. T. Finney, Harry Adler, Robert P. Bay, William H. Smith, Thomas S. Cullen, A. M. Shipley, Judge Walter I. Dawkins and Dr. H. A. B. Dunning.

The committee feels that the life and work of Dr. Hemmeter, who with Mrs. Hemmeter made possible the organization of a physiological laboratory at the University of Maryland, justifies the establishment of such a chair.

Dr. Hemmeter, who was graduated from the University of Maryland in 1884, was professor of physiology in his alma mater from 1903 to 1922. He has been a prolific contributor to medical literature both on clinical and experimental problems. He has also made noteworthy historical studies. He was the first to demonstrate an ulcer of the stomach by the X-ray and the diagnosis was confirmed later by an operation. He was also the first to intubate the duodenum. His activities have been many and varied. He is a distinguished scientist, clinician, teacher, lecturer, musician, linguist and historiographer. Nobody is more deserving of the honor that his alma mater proposes to bestow upon him.

GIVE NOW

The attention of our alumni and friends cannot be called too often to the dire need of an adequate endowment fund for the medical school. Student fees are not sufficient to meet the increasing demands of a modern medical curriculum. The income from this source must be augmented by other sources. Legacies are welcome, but gifts in hand will bring immediate results. Every department is handicapped in its work by a shortage of funds. Contributions may be given to the general medical fund, or to a special purpose, as research, fellowship, library, hospital, publication, scholarship, or to any other object the devisor desires. This money is placed in the hands of the Board of Trustees of the Endowment Funds for administration, which proviso absolutely guarantees to the donor that his wishes will be strictly observed. Give now!

THE JOSEPH W. HOLLAND BOOK-STACK

Elsewhere in this issue of THE BULLETIN is a notice of a Memorial erected at the University in honor of the late Dr. Joseph W. Holland (1869-1929), the funds for which were contributed by the student body at the suggestion of and under the leadership of the Student Council of the Medical School. THE BULLETIN believes that this enterprise is the first of its kind ever undertaken by our students. The Student Council is to be congratulated upon the successful completion of its goal, namely, the purchase of a metal book-stack for the University Library, the erection of a bronze tablet suitably inscribed and the execution of a symbolic book-plate which depicts Aesculapius warding off death.

THE BULLETIN bespeaks the co-operation of the alumni in putting the Holland Memorial on a permanent basis. To accomplish this, an adequate endowment must be forthcoming. A sum of at least \$1,000.00 is needed. This amount at 5% interest will yield \$50.00 a year with which to purchase new books or to subscribe to current medical journals. The cause is worthy. Help make it a success by sending in a subscription either to this office or to the Dean, Dr. J. M. H. Rowland. In either event, the gift will be placed in the proper hands for administration.

DR. ROBERT W. JOHNSON

In the death of Dr. Robert W. Johnson, the community has lost a citizen of the highest type and the medical profession a man who lived up to the best traditions of his high calling as a professor. The old adage "*de mortuis nil nisi bonum*" does not have to be invoked in his case. No one who knew him could speak of him except in praise.

Dr. Johnson was born at Rockland, Baltimore County, Maryland, September 8th, 1854. He died at 810 Cathedral Street on November 13, 1930. He was educated at private schools in Baltimore County, going to St. Paul's School in Concord, New Hampshire in 1869. He entered Princeton in 1872 and graduated A.B. in 1876. He attended the University of Maryland in 1876-77 and then took the two last years of medicine at the University of Pennsylvania, graduating from there in 1879. He spent one year as a post-graduate student in Vienna and returning to Baltimore, he engaged in the practice of surgery.

My first acquaintance with Dr. Johnson was at his sister's wedding at Rockland, Maryland, the family country estate, which has been in the family for many generations. He was at the time a student at Princeton University and had come home to witness the ceremony. At that time he was a handsome young man with dark hair streaked with gray. Our real acquaintance began at the University Club, where we were both members and of which club he was a charter member. It was principally through his efforts that the present home of the Club was acquired. This was the beginning of an acquaintance which deepened into friendship, so that when several years later the chair of surgery became vacant at the Baltimore Medical College, I urged the Faculty that he be chosen to fill it, and stated what I believe to be correct, that no other available man was as well qualified to fill the position. It was with considerable reluctance that he consented to accept the position and became Professor of the Principles of Surgery at the Baltimore Medical College and Surgeon-in-Chief at the Maryland General Hospital.

As a teacher, Dr. Johnson was popular and forceful, with a strong sense of humor. His service at the Baltimore Medical College and at the Maryland General Hospital began just during the transition between antiseptic and aseptic surgery. His first efforts in this position



DR. ROBERT W. JOHNSON
1854-1930

as a teacher and operator were to make clear the distinction between these two methods and to insist that good surgery and perfectly clean surgery could be done in almost any environment, if the operator were sufficiently interested to make the environment satisfactory. He was a man of strong convictions but was able to change these convictions when good cause was shown.

I personally saw him perform only two major operations in all the time I was associated with him—one of these was for gallstones and Dr. Osler was present on this occasion. His reputation was that of a skillful, careful, conscientious operator, with good surgical judgment. The results of his operations, which were among the first done in this hospital by the newer method, were watched with great interest and justified his faith in the method.

In his relations to his fellow teachers, hospital internes and students, he voiced his opinions firmly, was rather stern when discussing omissions, particularly if carelessness or indifference were obvious, but kind, sympathetic and always willing to instruct those about him, and ready with advice when asked. He was always extraordinarily prompt at Faculty meetings, conferences and lectures and expected the same promptness in others. His promises were invariably fulfilled.

In the last few years, our most frequent meetings have been at the University Club, where we talked over old times. The last time I saw him, just a few weeks before his death, he insisted that the Baltimore Medical College had had a fine class of students and that they had received as fine training as at any school in Baltimore.

Dr. Johnson will be missed by a host of men he has taught and by many doctors in the City and State who knew and admired him for his many lovable traits.

SAMUEL K. MERRICK.

ARE YOU USING THE PHARMACOPOEIA?

One of the large pharmaceutical associations has for some years organized within its ranks a U.S.P. and N.F. propaganda committee for the purpose of popularizing the preparations of these two publications among the pharmacists and physicians. This activity was stimulated due to a realization that the interest of the retail pharmacist and physician in these standards was passing into a stage of somnolent

passivity. The Revision Committees of the Pharmacopoeia and National Formulary are contemplating the formation of committees for a comprehensive program of publicity among the physicians and pharmacists for the purpose of stimulating interest in our National Standards. It is most unusual that there should exist a necessity to popularize these standards among physicians and pharmacists. First, these books as originally conceived were intended to be used primarily by physicians and pharmacists; second, these books represent the "law of the land" in drug standardization; and, third, within the covers of these books is contained the descriptions, physical, chemical tests and doses for practically all of the drugs used by physicians and pharmacists in the combat of disease and the preservation of health.

These three reasons cited (and others could be added) as a basis for general popularity of these standards among physicians and pharmacists are fundamental and convincing, but the fact that a publicity campaign is considered is evidence that nevertheless there remains a deficiency which militates against an enthusiastic use of these books.

The pharmaceutical, botanical, chemical and bacteriological aspects of the national standards cannot be challenged. They are good. But this is not enough. The prescribing physician and compounding pharmacist are not particularly interested in these phases. Manufacturing pharmacists and those interested in law enforcement are specifically engrossed in these phases of our standards. These groups, however, represent a small minority. The National Standards are the property of the public and should, therefore, contain the information which is interesting and useful to those groups recognized by law to prescribe and compound drugs to alleviate disease, namely, the practicing physician and pharmacist.

The principal feature of a drug to a physician is its capacity to alleviate or cure disease. The compounding pharmacist has a sympathetic interest in this central purpose and accordingly scientific compounding plays an important rôle in the accomplishment of this paramount aim. A therapeutic monograph based upon controlled biochemical, pharmacological and clinical evidence should accompany each drug where such information is available. This is the information which the prescriber and compounder are interested in—in their hands alone lies power to popularize the National Standards—in our

hands is the prerogative of making an exercising of this potential power possible—therapeutics is the answer.

The following are therapeutic monographs which may be considered typical for inclusion in the Pharmacopoeia:

SODIUM CITRATE

When sodium citrate is administered orally in therapeutic doses, the citric acid radical is for the most part metabolized, allowing the accumulation of the sodium ions in the blood. These sodium ions increase the alkali reserve of the blood; the excess sodium ions are eliminated by the urine in the form of disodium phosphate, which causes the urine to become less acid.

THYROXIN

Thyroxin when administered by mouth influences the pulse-rate, blood pressure and nitrogen metabolism. This substance produces symptoms of hyperthyroidism and hence is indicated in the treatment of myxedema. The action of thyroxin upon the body may be measured quantitatively by the determination of the basal metabolism rate. One milligram of thyroxin increases the basal metabolic rate of an adult of normal weight approximately 2 per cent. The dosage and increases in per cent of metabolic rate are proportional. When administered by mouth, thyroxin causes a noticeable increase in the pulse-rate after a period of twenty-four to thirty-six hours. The maximum effect is not reached until after approximately the tenth day and the effect of a single administration lasts over a period of approximately three weeks.

AROMATIC WATERS

Therapeutically the aromatic waters of the Pharmacopoeia are used principally as vehicles or solvents for the administration of other drugs. This serves to mask disagreeable odors and tastes of medicinal substances. The fact that they are saturated solutions of the volatile oil in water indicates that a portion of the therapeutic activity of the volatile oil is present in the aromatic water. As the solution of the oil in water is very dilute, the therapeutic activity of the aromatic water is not marked. The reader is referred to the monograph under the oil from which the aromatic water is prepared for the specific therapeutic action.

PHENOBARBITAL

Phenobarbital when administered by mouth in therapeutic doses produces a sedative action on the respiration and lessens the frequency of breathing. It produces sound sleep sometimes preceded by a period of excitement. The drug is eliminated by the kidneys. However, portions of the molecule are undoubtedly decomposed in the organism. This hypnotic apparently may be administered without gastric disturbances.

JOHN C. KRANTZ, JR.

UNIVERSITY OF MARYLAND BIOLOGICAL SOCIETY

On November 25, 1930 the University of Maryland Biological Society held its fourth annual meeting. At this meeting the regular business of the Society was conducted and officers were elected to serve for the ensuing year. The following officers were duly installed:

President.....	Harvey G. Beck
Secretary.....	John C. Krantz, Jr.
Treasurer.....	O. G. Harne
Member of the Council.....	Edward Uhlenhuth
Member of the Council to serve for two years..	Earl S. Johnston

The Biological Society has arranged an interesting series of programs, and it is hoped that all of the members of the medical faculty and alumni will avail themselves of the privilege to listen to these instructive and comprehensive papers.

GOVERNOR RITCHIE IN FAVOR OF A NEW UNIVERSITY
OF MARYLAND HOSPITAL

In his biennial message to the General Assembly of the State of Maryland, January 7, 1931, among other proposals Governor Albert C. Ritchie asks that the general construction loan provide \$1,500,000 toward the construction of a new \$2,000,000 University of Maryland Hospital, to be erected on a site near the present hospital at Lombard and Greene streets, Baltimore. Knowing that this information will be most welcome news to our alumni, the Bulletin hastens to reproduce in full that part of the message which deals with this proposition. While a new hospital is not as yet an actuality, the fact that

the Governor is in favor of it is most encouraging. THE BULLETIN hopes in its next issue to be able to announce the passage of the enabling bill sanctioning the loan.

Of the plan for a new University of Maryland Hospital, the Governor in his message says:

Provision has been made by previous Legislatures to adequately house the schools of medicine, dentistry, pharmacy and law. A modern laboratory and classroom building for the schools of dentistry and pharmacy has recently been completed, and the buildings formerly occupied by those schools have been remodeled for the use of the medical school. The 1929 Legislature provided funds which have recently become available for a new building for the law school, and this is about to be erected.

To adequately care for the entire Baltimore group only one thing now remains. That is to make proper provision for the University Hospital.

This has been the subject of public discussion for a number of years. I have in the past not hesitated to express my belief that in a State like Maryland a State university comprising so many diversified departments is a burden on the taxpayers. Nevertheless, the university exists as a State institution, and the responsibility is on the State of maintaining and supporting it adequately in its various branches.

One of these branches is the University Hospital. For many years this hospital has played an important part in the history of medical teaching in Maryland, and it has furnished a high order of hospital treatment to thousands of the citizens of the State.

The present condition of the hospital is such that it must be remodeled or a new hospital be constructed. The hospital is absolutely essential as a means of providing necessary teaching material for the students in the medical school, and it should supply as fully as possible the need of hospital facilities for persons of moderate means and those entirely unable to pay for them. Expressed differently, the State's responsibility in regard to the hospital rests on both teaching and humanitarian reasons.

The problems involved have been approached from the standpoint of securing teaching facilities at other hospitals, and this has been found impracticable; from the standpoint of remodeling the present building, and this has been found to be unwise and undesirable because of its age, condition, design and structural weakness; and from the standpoint of rebuilding on the present site, which has been found to be unwise because of the limited ground area, the character of the surroundings and the impossibility of conducting the hospital during the year or more which would be needed for reconstruction.

Consequently, by a process of elimination it has become evident that nothing but the construction of a new hospital on a new site will meet the problems which the hospital now faces, and which it has become the duty of the State to solve. An excellent site is available in the immediate vicinity of the present one which would give the new hospital a much more desirable location than it now has, both for students and for the public. It is planned that the new building will accommodate 400 patients, which would include the necessary beds for teaching purposes and for private cases, and it would be equipped with all modern facilities for the treatment of patients.

It is estimated that the new site can be purchased, the hospital built and equipped and the necessary additional facilities provided for the nurses at a cost of \$2,000,000.

I have discussed the financing at length with the hospital authorities and others interested, and also with Mr. George M. Shriver, chairman of the Maryland Commission on Higher Education. In addition to Mr. Shriver, the other members of this commission are Dr. Lewellys F. Barker, Judge Eli Frank, Mr. M. Ernest Jenkins, Miss Lavinia Engle, Mr. Morton M. Prentiss and Mr. William Stanley, and after very thorough consideration the commission reports that the need of the new hospital "is so urgent that its provision should take precedence over all other further construction work either in Baltimore or at College Park."

The result of these conferences has been that public-spirited persons interested in the new hospital have agreed to raise and donate approximately \$250,000 toward its construction, and arrangements have been made to finance the purchase of the site until a subsequent Legislature takes it over. In view of these assurances, I am recommending that the general construction loan provide the additional \$1,500,000, which will be required for the \$2,000,000 new hospital.

BOOK REVIEW

WILLIAM STEWART HALSTED: By W. G. MacCallum. Baltimore. The Johns Hopkins Press. Cloth, \$2.75.

This book should have an appeal not only to the profession but also to the public inasmuch as both profitted liberally by the labors of Professor Halsted. The profession is abundantly aware of the many obligations it owes Dr. Halsted for his pioneer work in the field of surgery. While these contributions to the advancement of the medical art are fully discussed by MacCallum and are of historical interest, it is the portrayal of the personal characteristics of this great surgeon, teacher, scientist and benefactor of mankind that is especially appealing to the reader. Those interested in the part played by Americans in the development of modern surgery should read this book, for Halsted and his pupils have made many contributions which have profoundly influenced the science and art of surgery.

We subscribe most heartily to the statement of Dr. Welch that Dr. MacCallum has rendered a great service to our own and future generations in setting forth in permanent record and with complete understanding and sympathy the essential facts and events in the life and work of Halsted and in leaving with us a truthful picture of the man as he revealed himself to the world.

PLEASE NOTE

The Dean is most anxious to secure a catalogue of the College of Physicians and Surgeons for the session of 1901-1902. If any of our readers has a copy to spare, the courtesy will be much appreciated by Dr. J. M. H. Rowland, Lombard and Greene Sts., Baltimore, Md.

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The names listed above are our officers for the term beginning June 1, 1930, and ending June 1, 1931.

THE JOSEPH W. HOLLAND MEMORIAL

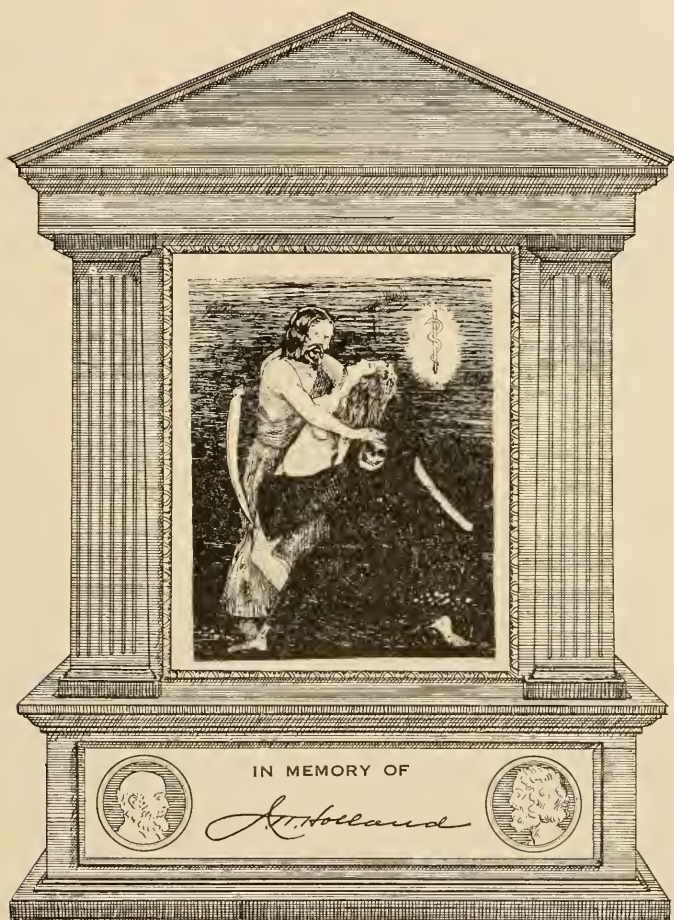
The Student Council of the Medical School has sponsored a memorial to the late Dr. Joseph W. Holland in the form of a book rack in the University Library. Student subscription during the past year has provided the funds for this undertaking.

Upon the approval of the Library Committee, an Art Metal rack has already been installed in Davidge Hall and an appropriate bronze tablet, worded as follows, has been placed under Dr. Holland's picture:

This Collection of Books is Given by
His Friends, Associates and Students
in Memory of

JOSEPH W. HOLLAND, M.D.
1869-1929

CLINICAL PROFESSOR OF SURGERY
UNIVERSITY OF MARYLAND
Vincet Qui Se Vincit



THE HOLLAND BOOK-PLATE

A symbolic book plate was planned and executed by Mr. Carl D. Clarke of the University Art Department and the signature was authorized by Mrs. Holland.

It is estimated that the rack will hold five hundred books, which should make a unique addition to the University Library. Have you a work on some aspect of Modern Surgery or Medicine or some rare Medical Manuscript which you would care to present to the Holland Memorial? The Student Council will greatly appreciate your sending such a book or two directly to Mrs. Ruth Lee Briscoe, the University Librarian, who will make the proper allocation on the Holland Rack.

A fund is being raised to perpetuate this Memorial. Those desiring to contribute to this worthy cause may send their subscription to Dr. J. M. H. Rowland, Dean of the Medical School, who will place the gift in the hands of the Board of Trustees of the Endowment Fund. The interest from this fund will be used to purchase current surgical literature.

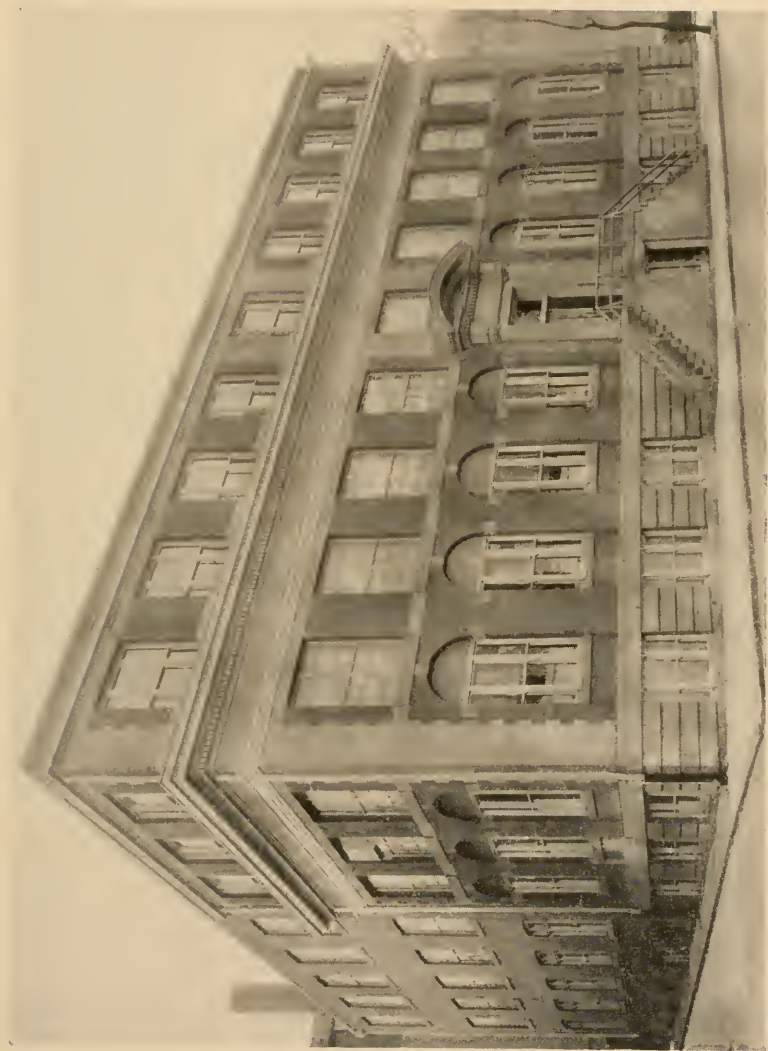
It is hoped that the Alumni will co-operate in making this Memorial a lasting tribute to Dr. Holland.

THE WILLIAM ROYAL STOKES MEMORIAL LECTURESHIP

A fund of \$3,679.15 has been raised by the Medical and Chirurgical Faculty for the establishment of a memorial lectureship in honor of Dr. William Royal Stokes, class of 1896, who died of psittacosis about a year ago while investigating the disease. Gifts will be accepted until next spring. It is hoped that \$5,000 will be collected. In giving his life that others might live this is truly a small recognition of his service to humanity. Those who wish to contribute to this most worthy object may make out a check and send it to the Stokes Memorial Committee, care of the Medical and Chirurgical Faculty of Maryland, 1211 Cathedral St., Baltimore, Md.

NEW QUARTERS FOR DEPARTMENT OF PATHOLOGY

With the opening of the Medical School in October, the Departments of Bacteriology, Biochemistry, Clinical Pathology, Pathology, and Medical Art moved into new quarters in the Old Dental Building. During the summer this building was remodeled and equipped at a



NEW QUARTERS OF PATHOLOGICAL LABORATORIES

cost of between \$90,000. and \$100,000. It is as it stands today, a thoroughly modern laboratory unit.

The Department of Pathology functioning as a teaching department, and as the Department of Pathology for the University Hospital, utilizes about 40% of the space in this building.

In the basement are situated seven teaching museums equipped to take care of the group teaching of Applied Pathology. These rooms are designated Obstetrical and Gynecological Pathology, Genitourinary Pathology, Surgical Pathology, Central Nervous System Pathology, Cardiovascular Pathology, Respiratory Pathology, and Gastrointestinal Pathology, and in them are to be found mounted specimens, autopsy cases with histories, microscopic slides, etc., pertaining to the respective divisions.

In the basement also are store-rooms for supplies and for gross surgical and autopsy material, students' locker room and students' toilets.

On the first or main floor are the departmental offices, library, six small laboratories used by members of the department for routine work and research, and three technical rooms used for the preparation of microscopic sections and the mounting of material for the museum. On this floor also is the experimental animal room, equipped with necessary instruments, sterilizers and a portable X-ray machine, and a large conference room equipped with apparatus necessary for all types of projection, which is utilized for Clinical Pathological Staff Conferences. The Department of Medical Art, with the most modern equipment, is also located on this floor.

On the second floor is situated a large students' laboratory, which is used by the Department of Pathology in the teaching of General Pathology. This laboratory is also utilized by the Departments of Bacteriology and Clinical Pathology.

With these increased facilities in the way of space and equipment, the Department of Pathology is now in a position to undertake with renewed vigor the carrying out of its many projects.

TO THE NEW ENGLAND GRADUATES OF THE
UNIVERSITY OF MARYLAND

On October 4th a meeting of some of the old grads was held in New Haven at which time we had the great pleasure of meeting the secretary of the Alumni, the football team and the coaches. The secretary, Mr. Pollack and head coach Mr. H. C. Byrd expressed a wish that we fellows of New England get together and form the New England Alumni Association of the University of Maryland, and it is for that purpose I am sending this letter to you. Down in College Park they are doing things in a big way for you. We have a great football team, a fine baseball team and in lacrosse we lead the country. All other sports follow along the same line. So let's get together and show them we appreciate their work. You can do this by simply expressing your willingness by sending your name and address to the secretary.

JOHN F. QUINN, M.D., *Secretary*,
144 Golden Hill Street,
Bridgeport, Conn.

ITEMS

The Bulletin notes with much pleasure and great satisfaction that Major N. T. Kirk, M.C., U. S. Army, class of 1910, has contributed the section on amputations in Lewis' Practice of Surgery; Dr. A. M. Shipley, class of 1902, on thoracic surgery, and Dr. Albert E. Goldstein, P. and S., class of 1912, on the anatomy and physiology of the kidney.

Dr. D. S. Owens, class of 1930, an interne in the University of Maryland Hospital, was severely injured in an automobile accident, December 11, 1930, when the automobile in which he was riding on the Richmond Highway near Accotink, Va., collided with another car. The Bulletin is glad to announce that Dr. Owens has sufficiently recovered to return to his duties.

Mrs. Ruth Lee Briscoe, the librarian, has the nucleus of a collection of book plates of our medical alumni. She is anxious to add to the collection and would greatly appreciate 2 copies from any of the alumni who use them.

At the annual meeting of the Baltimore City Medical Society the following alumni were elected to office:

Secretary.....Dr. E. P. Smith, P. and S., class of 1912

Treasurer.....Dr. Charles Emil Brack, P. and S., class of 1895

Board of Censors.....Dr. Charles Bagley, Jr., class of 1904

House of Delegates:

Dr. T. K. Galvin, P. and S., class of 1915

Dr. W. R. Geraghty, B.M.C., class of 1912

Dr. Frank S. Lynn, class of 1907

Dr. A. Samuels, P. and S., class of 1898

Dr. C. W. Maxson, P. and S., class of 1910

Nominating Committee:

Dr. A. M. Shipley, class of 1902

Dr. Alexius McGlannan, P. and S., class of 1895

BIRTHS

On September 23, 1930, a son, Cyrus Flook Horine, Jr., to Dr. Cyrus F. Horine, Baltimore, Md., class of 1919, and Mrs. Horine, née Blanche Martin, class of 1921, University of Maryland Training School for Nurses.

On October 23, 1930, a son, to Dr. J. M. Reese, Baltimore, Md., class of 1920, and Mrs. Reese, née Kate Hogshead, University of Maryland Training School for Nurses, class of 1921.

On October 27, 1930, a boy, to Dr. R. G. M. Ehlers, Medicine Lake, Montana, class of 1917, and Mrs. Ehlers.

DEATHS

DR. FRANCIS XAVIER BEAULIEU, Taunton, Mass.; B. M. C., class of 1900; aged 51; died, June 13, 1930.

DR. HARVEY T. BILLYCK, Monongahela, Pa.; P. & S., class of 1885; formerly mayor, member of the city council and school board; aged 79; died, September 22, 1930, of chronic myocarditis and acute gastritis.

DR. JOSEPH IRA COLEMAN, Durham, N. C.; P. & S., class of 1885; aged 71; died, October 21, 1930, of cardiac disease.

DR. JAMES M. CASKIE, Remington, Va.; P. & S., class of 1880; aged 70; died, November 4, 1930, of injuries received when he was struck by an automobile.

DR. FREDERICK RAYMOND DEVINE, Riverside, R. I.; class of 1913; aged 38; died, August 15, 1930, of cardiac disease.

DR. RALPH ELMERGREEN, Milwaukee, Wis.; B. M. C., class of 1892; aged 60; died, September 15, 1930, of cardiac disease.

DR. DORSEY PAUL ETZLER, Woodsboro, Md.; class of 1915; served during the World War; aged 40; died, in September, 1930, of pulmonary tuberculosis.

DR. ALBERT GRIFFITH EYESTON, Gibsonburg, Ohio; B. M. C., class of 1900; served during the World War; aged 60; died, October 10, 1930, of cardiac disease.

- DR. WILLIAM RUSSELL FARGO, Baltimore, Md.; class of 1929; aged 27; died, September 13, 1930, of an infection of the face.
- DR. EDWIN BOUCELLE FEREBEE, Belcross, N. C.; P. & S., class of 1885; aged 65; died, September 25, 1930.
- DR. CORNELIUS S. FRANKLE, Milleville, N. J.; P. & S., class of 1900; aged 52; died, November 1, 1930, of cardiac disease.
- DR. AUGUSTUS EDWARD F. GREMLER, Baltimore, Md.; B. M. C., class of 1889; aged 64; died, August 8, 1930, of chronic myocarditis.
- DR. LEWIS VAN GILDER GUTHRIE, Huntingdon, W. Va.; P. & S., class of 1889; superintendent of the Huntingdon State Hospital; aged 62; died, September 20, 1930, of chronic nephritis.
- DR. HENRY J. HAHN, Baltimore, Md.; class of 1899; aged —; died, December 5, 1930, of cardiac disease.
- DR. HENRY S. HERMAN, Hagerstown, Md.; class of 1876; aged 80; died, November 14, 1930.
- DR. HUGH PAYNE HIRST, Leetown, W. Va.; B. M. C., class of 1895; aged 71; died, December 20, 1930.
- DR. HENRY H. IRWIN, Woodstock, Va.; P. & S., class of 1885; aged 67; died, July 23, 1930, of softening of the brain.
- DR. OLIVER EDWARD JANNEY, Baltimore, Md.; class of 1881; also a graduate of Hahnemann Medical College of Philadelphia, class of 1882; formerly professor of practice and clinical pediatrics in the Southern Homeopathic Medical College, Baltimore; aged 74; died, November 17, 1930, of pneumonia. He was a minister of the Society of Friends. He was much loved by his friends and a useful and public spirited citizen.
- DR. JAMES MADISON KENNEDY, Brigadier General, U. S. Army, retired, Washington, D. C., P. and S., class of 1892, entered Army as an Assistant Surgeon in 1893; advanced through the various grades to that of Colonel in 1917; appointed Brigadier General, assistant to Surgeon General in 1927; served during Spanish-American War; chief surgeon, division of Philippines, 1900-1902; formerly in command of the Letterman General Hospital, Presidio of San Francisco, and of the Army Medical Center, Washington; awarded the distinguished service medal during the World War; member of the American College of Surgeons; aged 64; died, October 15, 1930, of carcinoma of the pancreas with metastases to the liver.
- DR. FRANKLIN HARRIS LACKEY, Fallston, N. C.; class of 1915; aged 41; died, November 15, 1930, of cerebral hemorrhage.
- DR. GEORGE LEWIS LININGER, Frostburg, Md.; B. M. C., class of 1902; aged 57; died, September 22, 1930.
- IRENE AGNES MAXWELL, Pleasant Hill, Owings Mills, Maryland; University of Maryland Training School for Nurses, class of 1923; aged 28; died, December 22, 1930, of tuberculosis.
- DR. CHARLES D. McRAE, Rochelle, Georgia; class of 1889; formerly member of the Georgia State Legislature; aged 66; died, October 3, 1930.
- DR. WALTER ARTHUR MONNICH, Minneapolis, Minn.; B. M. C., class of 1910; served during the World War; aged 46; died, August 28, 1930, of pulmonary tuberculosis.
- DR. JAMES WILLIAM McDONALD, Worcester, Mass.; class of 1902; aged 60; died, September 26, 1930, of cardiac disease.
- DR. DAVID R. PERKINS, Marshville, N. C.; B. M. C., class of 1903; aged 52; died, November 12, 1930, of carcinoma of the small intestine.
- DR. ROY CLIFFORD POTTER, Chillicothe, Ohio, class of 1908; aged 49; died, December 11, 1930, after a short illness.

- DR. OSCAR P. SCHAUB, Winston-Salem, N. C.; B. M. C., class of 1898; aged 57; died, September 8, 1930, of cerebral hemorrhage.
- DR. NOAH FREDERICK SCHMUCKER, Mt. Jackson, Va.; B. M. C., class of 1897; aged 58; died, September 14, 1930, of diabetes mellitus.
- The Bulletin is indebted to Dr. Isaac P. Robinson, Shreveport, Louisiana, B. M. C., class of 1897, for the following tribute paid his late classmate, Dr. N. F. Schmucker. The notice was copied from the Mt. Clifton, Va. paper of September 17, 1930:

DR. SCHMUCKER DIES AT PATIENT'S BEDSIDE

It would be utterly impossible to describe the consternation and dismay with which the community and whole countryside on Sunday morning greeted the appalling news that their beloved physician and friend, Dr. Schmucker was no more. Shortly after midnight Saturday night, or in other words about 2 A. M., Sunday morning, while seated at the bedside of a patient, where he had just ministered to the wants of a little newborn life, his own life work suddenly ended. He fell back to the floor and died without a murmur. Ministering to the wants and faithfully trying to alleviate the sufferings of his fellow beings, he gave unselfishly of his failing strength and like a loyal soldier he died at his post. If there is any higher eulogy than this, we know it not.

Dr. N. F. Schmucker was born at Tom's Brook, Va., studied medicine at and graduated from the Baltimore Medical College with the class of 1897, and came to this village where he began the practice of his chosen profession in August, 1897. He was popular from the beginning, and met with great success. He was eagerly sought as a physician and was known and loved by high and low alike. On September 29, 1903, he married Miss Ollie Osborn, daughter of the late Dr. Osborn, who was a greatly loved and respected county physician. Dr. Schmucker and his wife lived in the beautiful ancestral Osborn home, where he maintained his offices. By wise investments he died possessed of a great amount of wealth. He will not be missed, however, because of his earthly possessions, but for the deeds he has done. The esteem, in which the Doctor was held, was partly evidenced by the immense throng which attended his simple funeral services at his home on Tuesday morning. Interment took place on what would have been his birthday, the final summons coming just two days before he reached his 59th milestone. Dr. Schmucker had been in failing health for a number of years and had just returned from a trip to the New England Deaconess Hospital, Boston, where he had been under the care of Dr. E. P. Joslin, so he was far from fit when called upon to minister to this his last case, but as always he spared not himself in ministering to others.

- DR. DAVIS L. SHAVER, Maurertown, Va.; B. M. C., class of 1888; aged 66; died, in October, 1930, of cardiac disease.
- DR. NICHOLAS J. SHIELDS, San Luis Obispo, Calif.; B. M. C., class of 1898; aged 55; died, October 10, 1930.
- DR. LEANDER ZEBINA SKINNER, Londonville, Ohio; B. M. C., class of 1894; aged 63; died, October 10, 1930, of angina pectoris.
- DR. JOSEPH TAIT SMITH, Baltimore, Md.; class of 1872; formerly associate professor of hygiene and clinical medicine at his alma mater; aged 80; died, May 10, 1930, of carcinoma of the prostate gland.
- DR. JOHN CALVIN SMITH, Caloosa, Okla.; B. M. C., class of 1902; aged 54; died, July 20, 1930.
- DR. ISAAC WALTER UMBEL, Orient, Pa.; P. & S., class of 1906; aged 50; died, June 25, 1930, of a fractured skull received in an automobile accident.
- DR. WILLIAM PAUL TEBAULT, New Albany, Ind.; P. & S., class of 1883; aged 65; died, September 26, 1930.
- DR. JOHN A. WEAMER, Tarentum, Pa.; B. M. C., class of 1896; aged 61; died, August 13, 1930, of pulmonary abscess.
- DR. MARCUS DUKE SMITH, Cambridge, Md.; class of 1914; served during the World War; aged 38; died, July 25, 1930, of pulmonary tuberculosis and tuberculous laryngitis.
- DR. JOHN E. TOOLE, Bainbridge, Ga.; P. & S., class of 1889; formerly mayor of Bainbridge; aged 62; died, in November, 1930.

DR. SAMUEL THEOBALD, Baltimore, Md.; class of 1867; professor emeritus of ophthalmology at the Johns Hopkins University School of Medicine; aged 83; died, December 20, 1930, after a lingering illness and senility. Dr. Theobald was the first professor of ophthalmology at the Johns Hopkins University. Fifty years ago he introduced boric acid solutions as a collyrium. He announced the discovery after studies made while he was with the old Baltimore Eye and Ear Hospital, now the Baltimore Eye, Ear and Throat Hospital. Dr. Theobald was born in Baltimore, Md., November 12, 1846. He was a son of Dr. Elisha Warfield Theobald, a founder and lecturer at the Maryland Medical Institute (1847), and Sarah F. Smith. His mother was a daughter of the celebrated Nathan R. Smith, for many years professor of surgery at the University of Maryland. Dr. Samuel Theobald was the father-in-law of Dr. John Whitridge Williams, class of 1888, professor of obstetrics at the Johns Hopkins University and uncle of Warfield Theobald Longcope, professor of medicine at the Hopkins University.

Dr. Theobald was professor of diseases of the eye and ear, Baltimore Polyclinic, 1884; founder and ophthalmic and aural surgeon, Baltimore, Eye, Ear and Throat Charity Hospital. He was appointed clinical professor of ophthalmology, at the Johns Hopkins University, 1894-1925. He was vice-president Medical and Chirurgical Faculty of Maryland, 1899-1900 and the president of this society, 1900-1901; president of the Ophthalmological Society in 1907 and of the American Otological Society in 1909. His most important literary contribution is "Anatomical and Clinical Investigations, Bearing Upon the Treatment of Strictures of the Lachrymal Passages." In 1887, he invented a set of lachrymal probes. He was an ornament to the profession and a credit to his alma mater.

DR. GEORGE LONEY WALLACE, Wrentham, Mass.; B. M. C., class of 1898; superintendent of Wrentham State Hospital; aged 58; died, July 3, 1930, of cardiac disease.

COMMUNICATION

Dr. J. M. H. Rowland, Dean,
Medical Dept., University of Maryland,
Baltimore, Maryland.

November 23, 1930.

Dear Dr. Rowland:

I have just returned from a month's vacation, and looking over the October Bulletin of the University of Maryland, on Page 116 notice the clipping of the "Boston Herald." And on reading it it would appear that I was the headliner rather than the late Dr. George L. Wallace. There was no mention on the page that he was an alumnus. His unusual achievement is so fully recognized that I am enclosing a clipping from a recent issue of the "New England Journal of Medicine," and I think that emphasis should be placed on the fact that he was a graduate of Baltimore Medical College and an alumnus of the Medical School of the University of Maryland. His death is not mentioned in the deaths recorded on page 114. I feel that the activities of alumni of the University who are associated in fields away from the centre zone should be emphasized. It acts as a stimulus and rouses enthusiasm of the graduates outside the State of Maryland. If you see fit to put this in the proper hands for publication in the Bulletin you may do so.

With utmost cordiality, I remain

Very truly yours,

Henry J. Keaney, M.D.,
385 Broadway,
Everett, Mass.

The Bulletin regrets the oversight so justly complained of by Dr. Keaney. It was unintentional. A full account of Dr. Wallace's death had been prepared to precede the laudatory comments so kindly sent the Bulletin's office by him, but in making up the page forms it was found that more material was in hand than could be used. To bring the issue within the allotted number of pages some of this material had to be held over for the next issue. In doing this the proof-reader did not notice that the account about Dr. Wallace had been mutilated. The Bulletin wishes to take this opportunity to thank Dr. Keaney for calling attention to this matter, as well as to assure him that it was not the intention of the Bulletin to feature him but Dr. Wallace.

RESOLUTIONS ON THE DEATH OF DOCTOR GEORGE LONEY WALLACE*

The untimely death of Dr. George Loney Wallace removed from the broad field of Psychiatry one of its outstanding figures.

Dr. Wallace was born in West Gore, Nova Scotia, February 5, 1872. He was the son of a clergyman, and a member of a distinguished family. He was reared on a farm, but his early interest in education indicated that his career would follow along other lines. He began to teach school at the age of eighteen. When he reached the age of twenty years he realized the need of a broader field for the display of his activities, and coming to Massachusetts sought employment at the Massachusetts School for Feeble-minded.

At Waverley, his outstanding qualities and qualifications soon attracted the attention of the late Dr. Walter E. Fernald, whose inspiration stimulated Dr. Wallace to pursue a course in medicine. He graduated from the Baltimore Medical College in 1898, ranking first in a large class, and on graduation became a member of the staff of the Massachusetts School for Feeble-minded. Here his work was of superior quality, and promotion came rather quickly, and finally for a number of years he held the position of first assistant physician under Dr. Fernald.

On March 1, 1907 he was appointed Superintendent of the Wrentham State School, which at that time consisted of nothing more than the enabling act, and the acquisition of a tract of land by the State. He remained as Superintendent of the Wrentham State School until his death on July 3, 1930.

The Wrentham State School is his memorial, displaying and presenting his unusual creative powers and rare conception of the practical needs of the mentally defective individual. From the standpoint of construction, he had to an unusual degree the ability to look into the future, and to correctly arrange the integrating and coordinating of the various units which went to make up the completed institution. In this respect he was many years ahead of his times.

Not only was he a great builder and a great institution administrator, but he possessed unusual insight into the whole problem of mental defect. The sheet anchor of his successful management was service, and he was able to instill into the management and working of the whole school a very definite and wonderful spirit, that permeated and seemed to fit into the physical fabric. The Wrentham State School under Dr. Wallace was more than a collection of buildings filled with children who were being taught and trained. It was really the spirit of Dr. George Loney Wallace. He was a natural leader, and became an ideal to his trustees, his physicians, the other personnel, and greatest of all, to every child under his care.

His activities were not confined to the successful operation of his institution. His work extended far into the community; he recognized the necessity of attacking the problem at its source. So great and widespread was his reputation that his advice was sought by other States relative to the construction and management of institutions for the feeble-minded, and the prosecution of Mental Hygiene activities. Scarcely a week passed that some distinguished visitor from either one of our United States, or from some foreign country, did not visit the Wrentham State School, to study the School and its operation as a model, and to learn from the man himself what was best concerning the problem of caring for the feeble-minded.

Various organizations sought him as a speaker. He was a frequent contributor to the literature dealing with mental defect, and our knowledge of this subject has been greatly enriched by his study and efforts. He was a truly scientific man. He was a member of the State Medical Society, American Medical Association, The New England Society of Psychiatry, and the Massachusetts Psychiatric Society, of which he was Vice-President during the past year. He was an important and active member of the National Committee for Mental Hygiene, and was twice honored by being elected President of the American Association for the Study of the Feeble-minded, his last presidency being on the occasion of the World Congress of Mental Hygiene, held in Washington in May, 1930.

No small part of his great success was due to the charm of his personality. Pleasing, he could be firm, and was forever just. Possessing high ideals, he was conservative, but liberal, where liberality was required. Broad in his views, square in his judgment, he was always optimistic, hopeful, helpful, and especially sympathetic and considerate of the rights of others; his own comfort and material benefit ever being subordinated to the pleasure and welfare of others. He was respected and admired by his confreres, revered and loved by his subordinates, and actually worshipped by the children under his care.

His immeasurable loss is not only to the Wrentham State School and to the State of Massachusetts, but is a loss sustained to some extent by all other States, and even other countries of the world.

The Massachusetts Psychiatric Society has ample cause for being proud of the achievements of this great man.—(New England Journal of Medicine, 1930, CCIII, 1003.)

DR. BUXTON B. WILLIAMS, Greensboro, N. C.; class of 1883; aged 70; died, October 5, 1930, of nephritis, uremia and cardiac disease.

DR. A. CURTIN WOLF, Bedford, Pa.; P. & S., class of 1893; aged 67; died, September 4, 1930, of chronic nephritis and uremia.

DR. JAMES EDWARD WYANT, Philadelphia, Pa.; P. & S., class of 1914; served during the World War, on the advisory editorial staff of the Journal of Bone and Joint Surgery; aged 44; died, August 25, 1930, of cardiac disease.

* Adopted at the Annual Meeting of the Massachusetts Psychiatric Society, October 24, 1930.

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BULLETIN
OF THE
UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE
AND
COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. XV

APRIL, 1931

No. 4

ANNUAL ANNOUNCEMENT
SESSION 1931-1932

This catalogue presents the teaching staff for the present year and the announcement of courses for the ensuing one. Changes in the teaching staff and list of graduates of the Class 1930-1931 will appear in the July Bulletin.

CALENDAR
1931-1932
SCHOOL OF MEDICINE

FIRST SEMESTER

1931

September 28, Monday—*Registration for first- and second-year students.

September 29, Tuesday—*Registration for all other students.

September 30, Wednesday—Instruction begins with the first scheduled period.

November 26, Thursday—Thanksgiving Day. Holiday.

December 19, Saturday—Christmas recess begins after the last scheduled period.

1932

January 4, Monday—Instruction resumed with the first scheduled period.

January 30, Saturday—First semester ends after the last scheduled period.

SECOND SEMESTER

February 1, Monday—*Registration for first- and second-year students.

February 2, Tuesday—*Registration for all other students.

February 3, Wednesday—Instruction begins with the first scheduled period.

February 22, Monday—Washington's Birthday. Holiday.

March 24, Thursday—Easter recess begins after the last scheduled period.

March 29, Tuesday—Instruction resumed with the first scheduled period.

June 4, Saturday—Commencement. (Four o'clock in the afternoon.)

*A STUDENT WHO NEGLECTS OR FAILS TO REGISTER PRIOR TO OR WITHIN THE DAY OR DAYS SPECIFIED FOR HIS OR HER SCHOOL WILL BE CALLED UPON TO PAY A FINE OF \$5.00. THE LAST DAY OF REGISTRATION, WITH THE FINE OF \$5.00 INCLUDED, IS SATURDAY AT NOON OF THE WEEK IN WHICH THE SCHOOL HAS ITS SPECIAL REGISTRATION PERIOD. (THIS RULE MAY BE WAIVED ONLY BY ACTION OF THE COUNCIL OF DEANS.)

*The Offices of the registrar and the comptroller are open during the registration periods from 8.30 A. M. to 6.00 P. M.

THE UNIVERSITY OF MARYLAND

Control of the University of Maryland is vested in a Board of nine Regents, appointed by the Governor and confirmed by the Senate for terms of nine years each. The general administration of the University is vested in the President. The University Council is an advisory body, composed of the President, the Assistant to the President, the Director of the Agricultural Experiment Station, the Director of the Extension Service, and the Deans. The University Council acts upon all matters having relation to the University as a whole or to cooperative work between the constituent groups. Each school has its own Faculty Council, composed of the Dean and members of its Faculty; each Faculty Council controls the internal affairs of the group it represents.

The University has the following educational organization:

- The College of Agriculture,
- The College of Engineering,
- The College of Arts and Sciences,
- The School of Medicine,
- The School of Law,
- The School of Dentistry,
- The School of Pharmacy,
- The College of Education,
- The College of Home Economics,
- The Graduate School,
- The Summer School,
- The Department of Physical Education and Recreation.

The Schools of Medicine, Law, Dentistry and Pharmacy are located in Baltimore; the others in College Park, Maryland.

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E. V. TEAGARDEN, M.D., Assistant in Pediatrics.
S. C. FELDMAN, M.D., Assistant in Pediatrics.
RUTH F. CARR, B.S., Assistant in Biological Chemistry.
MAURICE SHAMER, M.D., Assistant in Obstetrics.
T. J. TOUHEY, M.D., Assistant in Surgery.
THOMAS C. WOLFE, M.D., Assistant in Medicine.
HENRY C. SMITH, M.D., Assistant in Medicine.
NATHANIEL BECK, M.D., Assistant in Medicine.
CARL BENSON, M.D., Assistant in Medicine.
F. S. WAESCHE, M.D., Assistant in Medicine.
A. SCAGNETTI, M.D., Assistant in Medicine.
I. H. MASERITZ, M.D., Assistant in Orthopaedic Surgery.
W. T. SCHMITZ, M.D., Assistant in Pediatrics.
M. PAUL BYERLY, M.D., Assistant in Pediatrics.
WALTER B. JOHNSON, M.D., Assistant in Pediatrics.
H. E. LEVIN, M.D., Assistant in Bacteriology.
H. L. WHEELER, M.D., Assistant in Surgery.
W. W. WALKER, M.D., Assistant in Surgery.
JOSEPH MILLETT, Ph.G., Ph.C., B.S., Assistant in Pharmacology.
M. L. SMALL, M.D., Assistant in Ophthalmology.
JOHN G. RUNKLE, M.D., Assistant in Ophthalmology.
DANIEL S. FISHER, M.D., Assistant in Obstetrics.
M. B. BALLARD, M.D., Assistant in Obstetrics.
E. S. EDLAVITCH, M.D., Assistant in Gynecology.
BIRCKHEAD MCGOWAN, M.D., Assistant in Diseases of the Nose and Throat.
F. J. GERAGHTY, M.D., Assistant in Pathology.
MAURICE J. ABRAMS, M.D., Assistant in Pathology.
THOMAS R. O'ROURKE, M.D., Assistant in Diseases of the Nose and Throat.
J. G. BENESUNES, M.D., Assistant in Orthopedic Surgery.

CLYDE F. KARNS, M.D., Assistant in Surgery.

L. U. LUMPKIN, M.D., Assistant in Surgery.

PAUL SCHENKER, M.D., Assistant in Surgery.

CARL P. ROETLING, M.D., Assistant in Surgery.

H. E. REIFSCHNEIDER, M.D., Assistant in Surgery.

WILLIAM E. EVANS, B.S., Assistant in Pharmacology.

ELIZABETH PAINTER, A.B., Assistant in Physiology.

University of Maryland School of Medicine

AND

College of Physicians and Surgeons

As a result of the merger accomplished in 1915 the combined schools offer the student the abundant resources of both institutions, and, in addition, by earlier combination with the Baltimore Medical College, the entire equipment of three large medical colleges.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was organized in 1807, and chartered in 1808, under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties: Divinity, Law, and Arts and Sciences; and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

Established thus for more than a century, the School of Medicine of the University of Maryland has always been a leading medical college, especially prominent in the South and widely known and highly honored throughout the country.

The beautiful college building at Lombard and Greene Streets, erected in 1812, is the oldest structure in America devoted to medical teaching. Here was founded one of the first medical libraries and the first medical college library in the United States.

Here for the first time in America dissecting was made a compulsory part of the curriculum; here instruction in Dentistry was first given (1837), and here were first installed independent chairs for the teaching of Diseases of Women and Children (1867), and of Eye and Ear Diseases (1873).

The School of Medicine was one of the first to provide for adequate clinical instruction by the erection in 1823 of its own hospital, and in this hospital intramural residency for the senior student was first established.

In 1913, juncture was brought about with the Baltimore Medical College, an institution of 32 years' growth. By this association the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated in 1872, and established on Hanover Street in a building afterwards known as the Maternite, the first obstetrical hospital in Maryland. In 1878 union was affected with the Washington University School of Medicine, in existence since 1827, and the college was removed to its present location at Calvert and Saratoga Streets. By this arrangement medical control of the City Hospital, now the Mercy Hospital, was obtained, and on this foundation in 1899 the present admirable college building was erected.

ORGANIZATION OF THE SCHOOL OF MEDICINE

LABORATORY AND CLINICAL FACILITIES

The Laboratories

The laboratories are located at two centers, the group of buildings at Greene and Lombard Streets, and at 32 and 34 South Paca Street. The schedule is so adjusted that the laboratory periods are placed with a view of obviating unnecessary movement on the part of the classes. The building known as Gray Laboratory, at Greene and Lombard Streets, houses three departments. The Anatomical Laboratory is placed upon the top floor, where skylights and an auxiliary modern system of electric lighting gives adequate illumination of the subjects. On this floor are the office of the department and the necessary preparation rooms. The Department of Pharmacology occupies the second floor. There is a large room for the general student laboratory, which is thoroughly equipped with apparatus of recent acquisition, and in addition contains many instruments of unique and original design. With office and stockroom adjoining, this laboratory is complete for student experimentation. On the first floor of Gray Laboratory is the Department of Physiology. In addition to the large student laboratory, which is constructed for groups of

forty-five students there are rooms for the departmental office, preparation of material, and storage of apparatus. An additional room is devoted exclusively to mammalian experiments. In this building there is maintained an animal room where is kept an abundance of material for experimental purposes. The embalming and storage plant for the Department of Anatomy is in physical connection with the building and its special departments. The laboratories of physiology and pharmacology are completely equipped with apparatus lockers so that, in accord with the best ideas of instruction, the students work in groups of two each, and each group has sufficient apparatus so that the experimental work can be carried on without delay or recourse to a general stock-room.

The laboratories of Pathology, Bacteriology, Biochemistry and Clinical Pathology are located in the Medical laboratory building on Greene Street north of Lombard.

The Departments of Pathology, Bacteriology and Clinical Pathology use, conjointly, the large modernly equipped student laboratory on the second floor. The capacity is 100 students. On the second floor also there are students' preparation rooms for the making and sterilization of media, cold storage and incubating rooms and research laboratories for the departments of Bacteriology and Clinical Pathology.

On the main floor of this building are the offices, library, research and technical rooms of the Departments of Pathology and Bacteriology. The Department of Art also occupies quarters on this floor. The basement is given over to teaching museums, store rooms, students' locker room and lavatories.

The Department of Biological Chemistry is housed on the top floor of this building. The space allotted to teaching includes a large student laboratory equipped with 132 commodious locker units supplied with gas, hot and cold water, vacuum and direct current service, a special apparatus room, a warm room, a colorimeter room, a balance room, a first-aid room and a stock-room. These rooms are appointed with modern laboratory furniture and apparatus, a constant temperature and ventilating system, and equipped and arranged for economic use of the students' time.

Adjoining the students' space are private offices and laboratories of the staff, a departmental library, a shop and a preparation room.

In the Main Building is the Museum of Anatomy, where are arranged for student reference, specimens which represent the careful selection of material over a period of many years. In the University Hospital is the Student Laboratory for the analytical studies by those students who are serving as clinical clerks on the wards. A similar laboratory is maintained in the building at the northwest corner of Saratoga and Calvert Streets, for the student work on the wards of the Mercy Hospital.

At 32 and 34 South Paca Street are the Histology Laboratories. These laboratories accommodate one hundred and twenty-five students or the full class and are equipped with necessary lockers for microscopes and apparatus. The department housed in this building is provided with individual offices, preparation and stockrooms.

Clinical Facilities

UNIVERSITY HOSPITAL

The University Hospital, which is the property of the University of Maryland, is the oldest institution for the care of the sick in the State of Maryland. It was opened in September, 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for eye patients.

The present hospital has a capacity of 250 beds devoted to general medicine, surgery, obstetrics and the various medical and surgical specialties. It is equipped with a thoroughly modern X-ray department and clinical laboratory, and a post-mortem building which is constructed with special reference to the instruction of students in pathological anatomy.

The hospital is situated opposite the medical school buildings so that the students lose no time in passing from the lecture halls and laboratories to the clinical amphitheater, dispensary and wards.

Owing to its situation, being adjacent to the largest manufacturing district of the city and the shipping district, large numbers

of accident patients are received. These combined with a large number of sick seamen and with patients from our own city furnish a large amount of clinical material. Accommodations for twenty-five obstetrical patients are provided in the hospital for the purpose of furnishing actual obstetrical experience to each member of the graduating class.

In connection with the University Hospital an outdoor obstetrical clinic is conducted, in which every patient is given careful prenatal supervision, is attended during labor by a senior student, supervised by a hospital physician and assisted by a graduate nurse, and is visited during the puerperium by the attending student and graduate nurse. Careful pre-natal, labor and puerperal records are kept, making this work of extreme value to the medical student, not only from the obstetrical standpoint, but for making him appreciate the value of social service and public health work.

HOSPITAL COUNCIL

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 SAMUEL M. SHOEMAKER, ESQ., *President of the Board of Regents*.
 J. M. H. ROWLAND, M.D., *Dean of the School of Medicine*.
 M. C. PINCOFFS, S.B., M.D., *Head of the Department of Medicine*.
 A. M. SHIPLEY, M.D., Sc.D., *Head of the Department of Surgery*.
 A. J. LOMAS, M.D., C.M., D.P.H., *Superintendent of the Hospital*.
 MISS ANNIE CRIGHTON, R.N., *Superintendent of Nurses*.
 J. ALLISON MUIR, ESQ.
 G. M. SHRIVER, ESQ.
 W. B. BROOKS, ESQ.
 MISS FLORENCE SADTLER, *Representing Woman's Auxiliary Board*.

Representing Hospital Staff

G. MILTON LINTHICUM, A.M., M.D.

C. REID EDWARDS, M.D.

Representing Medical Alumni

CHARLES W. MAXSON, M.D.

FRANK W. KEATING, M.D.

UNIVERSITY HOSPITAL STAFF

Superintendent of the Hospital, A. J. LOMAS, M.D., C.M., B.P.H.

Physicians

GORDON WILSON, M.D.

MAURICE C. PINCOFFS, B.S., M.D.

HARRY M. STEIN, M.D.

G. CARROLL LOCKARD, M.D.

WALTER A. BAETJER, M.D.

JOSEPH E. GICHNER, M.D.

C. C. HABLSTON, M.D.

WILLIAM H. SMITH, M.D.

L. A. M. KRAUSE, M.D.

WILLIAM S. LOVE, JR., M.D.

Gastro-Enterologist

JULIUS FRIEDENWALD, A.M., M.D.

Neurologist

IRVING J. SPEAR, M.D.

Psychiatrist

R. M. CHAPMAN, M.D.

Pediatrician

C. LORING JOSLIN, M.D.

Pathologists

HUGH R. SPENCER, M.D.

S. LLOYD JOHNSON, M.D.

Surgeons

RANDOLPH WINSLOW, A.M., M.D., LL.D. ARTHUR M. SHIPLEY, M.D., Sc.D.

NATHAN WINSLOW, M.D.

PAGE EDMUNDS, M.D.

CHARLES REID EDWARDS, M.D.

FRANK S. LYNN, M.D.

Laryngologists

EDWARD A. LOOPER, M.D.

FRANKLIN B. ANDERSON, M.D.

Proctologists

G. MILTON LINTHICUM, A.M., M.D.

J. DAWSON REEDER, M.D.

MONTE EDWARDS, M.D.

Orthopaedic Surgeons

ROBT. W. JOHNSON, JR., A.B., M.D.

COMPTON RIELY, M.D.

RAYMOND LENHARD, A.B., M.D.

MOSES GELLMAN, M.D.

Genito-Urinary Surgeons

W. H. TOULSON, A.B., M.Sc., M.D.

LYLE J. MILLAN, M.D.

Roentgenologists

HENRY J. WALTON, M.D.

EUGENE L. FLIPPIN, M.D.

Dermatologists

MELVIN S. ROSENTHAL, M.D.

HARRY M. ROBINSON, M.D.

Bronchoscopist

EDWARD A. LOOPER, M.D.

Anaesthetists

S. GRIFFITH DAVIS, M.D.

SAMUEL W. MOORE, D.D.S.

MARY J. O'BRIEN, R.N.

Obstetricians

J. M. H. ROWLAND, M.D.

L. H. DOUGLASS, M.D.

M. A. NOVEY, A.B., M.D.

J. G. M. REESE, M.D.

ISADOR A. SIEGEL, A.B., M.D.

DANIEL S. FISHER, M.D.

Ophthalmologists

CLYDE A. CLAPP, M.D.

WILLIAM TARUN, M.D.

Otologist

J. W. DOWNEY, JR., M.D.

Gynecologists

W. S. GARDNER, M.D.

HUGH BRENT, M.D.

R. G. WILLSE, M.D.

UNIVERSITY HOSPITAL STAFF

UNIVERSITY HOSPITAL RESIDENT AND INTERN STAFF
RESIDENT STAFF, 1931-1932

<i>Resident in Surgery</i>	GEORGE YEAGER, M.D.
<i>Assistant Resident in Surgery</i>	WYLIE MELVIN FAW, JR., M.D.
<i>Assistant Resident in Surgery</i>	LEON J. HARRELL, M.D.
<i>Assistant Resident in Surgery</i>	CLARENCE P. COSTER
<i>Resident in Medicine</i>	J. H. HORNBAKER, M.D.
<i>Assistant Resident in Medicine</i>	DANIEL G. CAUDY, M.D.
<i>Assistant Resident in Medicine</i>	MAURICE J. ABRAMS, M.D.
<i>Resident in Gynecology</i>	AUGUSTUS P. CHIDESTER, M.D.
<i>Resident in Obstetrics</i>	WILLIAM P. DAILEY, M.D.
<i>Assistant Resident in Obstetrics</i>	WILLIAM A. HART, M.D.

UNIVERSITY HOSPITAL DISPENSARY STAFF

*Medicine*L. A. M. KRAUSE, M.D., *Chief of Clinic*

INTERN STAFF, 1931-32

A. TALBOTT BRICE, M.D.	ARTHUR F. JONES, M.D.
KENNETH L. CLONINGER, M.D.	ALSTON G. LANHAM, M.D.
MELVIN B. DAVIS, M.D.	WALDO B. MOYERS, M.D.
BERNARD W. DONOHUE, M.D.	W. M. SEABOLD, M.D.
JOSEPH F. DRENGA, M.D.	CHRISTOPHER C. SHAW, M.D.
DONALD B. GROVE, M.D.	HARRY S. SHELLEY, M.D.
MILFORD H. SPRECHER, M.D.	

*Diseases of the Stomach and Intestines*J. H. ULLRICH, M.D., *Chief of Clinic*

JOSEPH SINDLER, M.D.	M. S. KOPPELMAN, M.D.
Z. MORGAN, M.D.	C. VANCE HOOPER, M.D.
C. VICTOR RICHARDS, M.D.	SAMUEL MORRISON, M.D.

Neurology

IRVING J. SPEAR, M.D., *Professor of Neurology*
 G. M. SETTLE, M.D., *Associate Professor of Neurology*
 LEON FREEDOM, M.D., *Chief of Clinic*

Mental Hygiene

RALPH P. TRUITT, M.D., *Director*
 ELMER KLEIN, M.D.

Diseases of the Lungs

C. C. HABLSTON, M.D., *Chief of Clinic*
 H. C. SMITH, M.D.

*Diseases of Metabolism*H. M. STEIN, M.D., *Chief of Clinic*

L. P. GUNDRY, M.D.

*Cardiovascular Diseases*WILLIAM S. LOVE, JR., M.D., *Chief of Clinic*

CHARLES GILL, M.D.

FRANK J. GERAGHTY, M. D.

SAMUEL J. HARKIN, M.D.

*Allergy Clinic*H. M. BUBERT, M.D., *Chief of Clinic**Pediatrics*C. LORING JOSLIN, M.D., *Professor of Clinical Pediatrics*JOHN H. TRABAND, M.D., *Chief of Clinic*CLARENCE E. MACKE, M.D., *Chief of Clinic*

ALBERT JAFFE, M.D.

A. H. FINKELSTEIN, M.D.

WILLIAM J. TODD, M.D.

CARL P. ROETLING, M.D.

F. STRATNER OREM, M.D.

M. PAUL BYERLY, M.D.

WILLIAM G. GEYER, M.D.

MORRIS A. FINE, M.D.

R. M. HENING, M.D.

S. C. FELDMAN, M.D.

MARIE KOVNER, M.D.

WILLIAM G. QUEEN, M.D.

CLEWELL HOWELL, M.D.

HARRY A. RUTLEDGE, M.D.

SAMUEL GLICK, M.D.

S. KENDIG WALLACE, M.D.

M. N. PUTTERMAN, M.D.

ROBERT H. MILES, M.D.

ELIZABETH S. SHERMAN, M.D.

*Surgery*CHARLES REID EDWARDS, M.D., *Chief of Clinic*

J. WILLIS GUYTON, M.D.

C. F. KARNS, M.D.

THOMAS B. AYCOCK, M.D.

A. C. MONNINGER, M.D.

E. S. JOHNSON, M.D.

W. W. WALKER, M.D.

L. U. LUMPKIN, M.D.

A. V. BUCHNESS, M.D.

W. R. JOHNSON, M.D.

H. E. REIFSCHNEIDER, M.D.

*Orthopaedic Surgery*ROBERT W. JOHNSON, JR., A.B., M.D., *Professor of Orthopaedic Surgery*RAYMOND LENHARD, A.B., M.D., *Chief of Clinic*

HARRY L. ROGERS, M.D.

I. H. MASERITZ, M.D.

MOSES GELLMAN, M.D.

W. A. SIMPSON, M.D.

Genito-Urinary

W. H. TOULSON, M.D., *Chief of Clinic*
 HARRIS GOLDMAN, M.D. MILTON C. LANG, M.D.
 SAMUEL J. HELMS, M.D. L. K. FARGO, M.D.
 LYLE J. MILLAN, M.D.

Roentgenology

HENRY J. WALTON, M.D., *Chief of Clinic*
 EUGENE L. FLIPPIN, M.D.

Dermatology

H. M. ROBINSON, M.D., *Chief of Clinic*
 M. H. GOODMAN, M.D. FRANCIS ELLIS, M.D.
 HARRY WASSERMAN, M.D. A. C. MONNINGER, M.D.

Nose and Throat

EDWARD A. LOOPER, M.D., *Clinical Professor of Diseases of the Nose and Throat.*

FRANKLIN B. ANDERSON, M.D., *Chief of Clinic*
 F. A. HOLDEN, M.D. THOMAS O'ROURKE, M.D.
 CHARLES H. CAHN, M.D. EDWARD TALBOTT, M.D.
 JOSEPH NURKIN, M.D.

Colon and Rectum

MONTE EDWARDS, M.D., *Chief of Clinic*

Gynecology

J. M. HUNDLEY, JR., M.D. JAMES J. MARSTON, M.D.
 WILLIAM J. FULTON, M.D. LEO BRADY, M.D.
 JOHN T. HIBBITS, M.D. KENNETH BOYD, M.D.
 JOSEPH V. CASTAGNA, M.D. E. EUGENE COVINGTON, M.D.
 THOMAS S. BOYER, M.D.

Obstetrics

L. H. DOUGLAS, M.D., *Chief of Clinic*
 J. G. M. REESE, M.D. M. ALEXANDER NOVEY, M.D.
 MAXWELL MAZER, M.D. ISADORE A. SIEGEL, A.B., M.D.
 MARGARET B. BALLARD, M.D. DANIEL S. FISHER, M.D.
 S. K. WALLACE, M.D.

Eye and Ear

CLYDE A. CLAPP, M.D., *Professor of Ophthalmology*
 J. W. DOWNEY, M.D., *Professor of Otology*
 CHARLES CAHN, M.D. JOHN G. RUNKEL, M.D.
 A. L. MACLEAN, M.D., C.M. H. F. GRAFF, A.B., M.D.

Social Service

MISS GRACE PEARSON, *Directress*

UNIVERSITY HOSPITAL DISPENSARY REPORT

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Dispensary Report from October 1, 1929 to September 30, 1930

DEPARTMENTS	PATIENTS		TOTAL
	NEW	RE-VISITS	
Pediatrics	3,102	18,107	21,209
Dermatology	6,369	12,089	18,458
Surgery	3,209	9,635	12,844
Obstetrics	1,796	6,837	8,633
Orthopedic	852	7,524	8,376
Medicine	1,992	6,315	8,307
Genito-Urinary	1,037	4,621	5,658
Gynecology	1,346	2,859	4,205
Eye	906	2,045	2,951
Nose and Throat	1,331	1,126	2,457
Ear	447	494	941
Gastro-Intestinal	156	747	903
Neurology	195	567	762
Proctology	160	358	518
Cardiology	69	348	417
Cystoscopy	50	187	237
Tuberculosis	62	141	203
Mental Hygiene	451	1,127	1,578
Total	23,530	75,127	98,657

MERCY HOSPITAL

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga Streets, then owned by the Washington University, in 1874. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of administering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly growing demands upon it. However, it was not until 1888 that the Sisters of Mercy, with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the cornerstone of the present Hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space has compelled the erection of additions, until now there are accommodations for 275 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

Mercy Hospital is located in the center of a city of 800,000 inhabitants.

The clinical material in the free wards is under the exclusive control of the Faculty of the University of Maryland School of Medicine and College of Physicians and Surgeons.

It adjoins the College building, and all surgical patients from the public wards are operated upon in the College operating rooms. This union of the Hospital and College buildings greatly facilitates the clinical teaching.

Mercy Hospital is the hospital of the United Railways and Electric Company of Baltimore City, and receives patients from the Baltimore and Ohio Railroad Company and from the Pennsylvania Railroad Company and its branches.

MERCY HOSPITAL STAFF

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BOARD OF GOVERNORS

SAMUEL M. SHOEMAKER, ESQ., *Chairman*

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SISTER M. HELEN	DR. WALTER D. WISE
SISTER M. HILDEGARDE	DR. THOMAS K. GALVIN
SISTER M. ANITA	DR. WAITMAN F. ZINN
SISTER M. CORNELIA	DR. STANDISH MCCLEARY

MERCY HOSPITAL STAFF

SURGICAL DIVISION

ALEXIUS MCGLANNAN, A.M., M.D.	ELLIOTT HUTCHINS, M.D.
W. D. WISE, M.D.	A. M. EVANS, M.D.
C. F. BLAKE, M.D.	F. L. JENNINGS, M.D.

Associate Surgeons

R. H. LOCHER, M.D.	I. O. RIDGLEY, M.D.
T. R. CHAMBERS, M.D.	N. C. MARVEL, M.D.
	D. J. PESSAGNO, M.D.

Assistant Surgeons

CHARLES MAXSON, M.D.	DWIGHT MOHR, M.D.
A. B. MCELWAIN, M.D.	H. F. BONGARDT, M.D.
T. J. TOUHEY, M.D.	J. W. NELSON, M.D.

Ophthalmologists and Otolologists

HARRY FRIEDENWALD, M.D.

Associates

H. K. FLECK, M.D.	J. W. DOWNEY, M.D.
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Rhinologists and Laryngologists

FRANK D. SANGER, M.D.	GEORGE W. MITCHELL, M.D.
W. F. ZINN, M.D.	RAYMOND MCKENZIE, M.D.

Associates

F. A. PACIENZA, M.D.
BIRCKHEAD MCGOWAN, M.D.

Proctologist

CHARLES F. BLAKE, M.D.

Orthopaedic Surgeon

ALBERTUS COTTON, M.D.

Associate

H. L. ROGERS, M.D.

MERCY HOSPITAL STAFF

Urologist

ALEXANDER J. GILLIS

Associate

KENNETH B. LEGGE, M.D.

Dentist

J. D. FUSCO, D.D.S.

MEDICAL DIVISION

Physicians

MAURICE C. PINCOFFS, M.D.

CARY B. GAMBLE, M.D.

STANDISH MCCLEARY, M.D.

HARVEY G. BECK, M.D.

Associates

HUBERT C. KNAPP, M.D.

GEORGE MCLEAN, M.D.

C. C. W. JUDD, M.D.

A. A. SUSSMAN, M.D.

H. R. PETERS, M.D.

L. A. M. KRAUSE, M.D.

BARTUS T. BAGGOTT, M.D.

JOHN E. LEGGE, M.D.

Assistant Physicians

WETHERBEE FORT, M.D.

J. M. MILLER, M.D.

J. S. EASTLAND, M.D.

S. A. TUMMINELLO, M.D.

Gastro-Enterologist

JULIUS FRIEDENWALD, M.D.

Associates

T. FREDERICK LEITZ, M. D.

THEODORE MORRISON, M.D.

Assistants

MAURICE FELDMAN, M.D.

JOSEPH SINDLER, M.D.

Pediatricians

JOHN RUHRAH, M.D.

EDGAR B. FRIEDENWALD, M.D.

Associate Pediatrician

F. B. SMITH, M.D.

Assistant Pediatrician

W. F. SCHMITZ, M.D.

Neurologist and Psychiatrist

ANDREW C. GILLIS, M.D.

Associates

MILFORD LEVY, M.D.

Dermatologist

MELVIN ROSENTHAL, M.D.

OBSTETRICAL DIVISION

CHARLES E. BRACK, M.D.	E. P. SMITH, M.D.
A. SAMUELS, M.D.	J. J. ERWIN, M.D.
W. S. GARDNER, M.D.	T. K. GALVIN, M.D.
G. A. STRAUSS, M.D.	E. S. EDLAVITCH, M.D.

GYNECOLOGICAL DIVISION

Gynecologists

WILLIAM S. GARDNER, M.D.	ABRAM SAMUELS, M.D.
GEORGE A. STRAUSS, M.D.	E. P. SMITH, M.D.
	T. K. GALVIN, M.D.

Associate

J. J. ERWIN, M.D.

Assistants

E. S. EDLAVITCH, M.D.
FRANK K. MORRIS, M.D.

PATHOLOGICAL DIVISION

STANDISH MCCLEARY, M.D.	HUGH R. SPENCER, M.D.
-------------------------	-----------------------

Clinical Pathologists

H. T. COLLENBERG, M.D.	
H. R. PETERS, M.D.	EMIL G. SCHMIDT, Ph.D.

Technicians

SISTER M. JOAN, Ph.G., R.N.	ELEANOR BEHR, R.N.
FRANCES DONOVAN, R.N.	

X-RAY DEPARTMENT

Radiographers

ALBERTUS COTTON, M.D.	HARRY L. ROGERS, M.D.
-----------------------	-----------------------

Technician—SISTER M. ANTONIA, R.N.

MERCY HOSPITAL RESIDENT STAFF

Resident Surgeon

JULIUS J. LEYKO, M.D.

Assistant Resident Surgeons

J. T. McANDREW, M.D.

ELDRED ROBERTS, M.D.

Resident, Nose and Throat

BENJAMIN RICH, M.D.

Resident Physician

EARL R. CHAMBERS, M.D.

Resident Gynecologist

HARRY ANKER, M.D.

Interne Staff 1930-31

G. M. BAUMGARDNER, M.D.

M. D. BONNER, M.D.

P. E. BERRY, M.D.

J. HOWARD BURNS, M.D.

JACOB G. FERNAN, M.D.

JULIUS GOODMAN, M.D.

G. BOWERS MANSDORFER, M.D.

JACK D. OWENS, M.D.

JOSEPH J. SMITH, M.D.

HORACE G. STRICKLAND, M.D.

W. MERLE WARMAN, M.D.

RALPH F. YOUNG, M.D.

DISPENSARY STAFF OF MERCY HOSPITAL

Surgery Supervisors

A. M. EVANS, M.D.

N. C. MARVEL, M.D.

H. F. BONGARDT, M.D.

Attending Surgeons

D. H. MOHR, M.D.

H. F. BONGARDT, M.D.

I. O. RIDGLEY, M.D.

T. J. TOUHEY, M.D.

JOHN O'CONNOR, M.D.

J. W. NELSON, M.D.

Genito-Urinary Surgery

A. J. GILLIS, M.D.

K. B. LEGGE, M.D.

Orthopaedic Surgery

ALBERTUS COTTON, M.D.

HARRY L. ROGERS, M.D.

I. H. MASERITZ, M.D.

Medicine Supervisor

M. C. PINCOFFS, M.D.

*Attending Physicians*HENRY SHEPPARD, M.D., *Chief of Clinic*

J. M. MILLER, M.D.

S. SNYDER, M.D.

S. A. TUMMINELLO, M.D.

R. HOOPER SMITH, M.D.

*Cardiovascular Diseases*T. C. WOLFF, M.D., *Chief of Clinic**Diseases of the Lungs*S. SNYDER, M.D., *Chief of Clinic**Diseases of Metabolism*J. S. EASTLAND, M.D., *Chief of Clinic**Allergic Diseases*H. M. BUBERT, M.D., *Chief of Clinic*

S. SNYDER, M.D.

DISPENSARY STAFF OF MERCY HOSPITAL

Diseases of Stomach

Supervisor, JULIUS FRIEDENWALD, M.D.

Attending Physicians

T. FREDERICK LEITZ, M.D.

THEODORE H. MORRISON, M.D.

M. FELDMAN, M.D.

JOSEPH SINDLER, M.D.

I. I. LEVY, M.D.

Esophagoscopist

W. F. ZINN, M.D.

Nervous Diseases

Supervisor, A. C. GILLIS, M.D.

Attending Physicians

MILFORD LEVY, M.D.

MIRIAM F. DUNN, M.D.

Pediatrics

Supervisor, EDGAR B. FRIEDENWALD, M.D.

Attending Physician, W. J. SCHMITZ, M.D.

*Gynecology**Supervisors*

W. S. GARDNER, M.D.

A. SAMUELS, M.D.

Attending Surgeons

GEORGE A. STRAUSS, M.D.

C. F. J. COUGHLIN, M.D.

J. J. ERWIN, M.D.

E. EDLAVITCH, M.D.

F. K. MORRIS, M.D.

F. W. GILLIS, M.D.

Diseases of Nose and Throat

W. F. ZINN, M.D.

R. F. MCKENZIE, M.D.

F. A. PACIENZA, M.D.

LOUIS SMALL, M.D.

B. MCGOWAN, M.D.

Diseases of Eye and Ear

H. F. FLECK, M.D.

M. RASKIN, M.D.

J. I. KEMLER, M.D.

F. A. PACIENZA, M.D.

Dermatology

MELVIN ROSENTHAL, M.D.

Social Service Department

SISTER M. HELEN, R.N.

VIRGINIA JUDGE

MERCY HOSPITAL DISPENSARY (1930)

	OLD	NEW	TOTAL
Surgical	1,962	802	2,764
Medical	1,537	902	2,439
Gynecological	511	258	769
Eye and Ear	372	251	623
Nose and Throat	547	473	1,020
Neurological	208	94	302
Children	232	197	429
Gastro-Intestinal	580	111	691
Dental	80	81	161
Rectal	77	45	122
Orthopaedic	788	314	1,102
Skin	332	194	526
Genito-Urinary	2,889	514	3,403
Roentgenology			355
Totals	10,115	4,236	14,706

OTHER CLINICAL FACILITIES

THE BALTIMORE CITY HOSPITALS

The clinical advantages of the University have been largely increased by the liberal decision of the Board of Supervisors of City Charities to allow the immense material of these hospitals to be used for the purpose of medical education. There are daily visits and clinics in medicine and surgery by the Staff of the Hospitals. The autopsy material is unsurpassed in this country in amount, thoroughness of study, and the use made of it in medical teaching.

The Baltimore City Hospitals consist of the following separate hospitals:

The General Hospital, 209 beds.

The Hospital for Chronic Cases, 427 beds.

The Hospital for Tuberculosis, 172 beds.

The Psychopathic Hospital, 325 beds.

Infirmery (Home for Aged), 911 beds.

STAFF OF THE BALTIMORE CITY HOSPITALS

R. E. LONGAN, BRIG. GEN., *Superintendent*

VISITING STAFF

THOMAS R. BOGGS, S.B., M.D., *Physician-in-Chief.*ARTHUR M. SHIPLEY, Sc.D., M.D., *Surgeon-in-Chief.*C. C. HABLSTON, M.D., *Physician-in-Chief to the Tuberculosis Hospital.*HARRY GOLDSMITH, M.D., *Physician-in-Chief, Psychopathic Hospital.*S. S. BLACKMAN, A.B., M.D., *Visiting Pathologist.*MAURICE J. ABRAMS, M.D., *Resident Pathologist.*

CONSULTING STAFF

Gynecologists

R. G. WILLSE, M.D.

J. MASON HUNDLEY, JR., M.A., M.D.

Urologist

W. H. TOULSON, A.B., M.D.

Laryngologists

H. R. SLACK, M.D.

E. A. LOOPER, M.D.

W. F. ZINN, M.D.

FRANKLIN B. ANDERSON, M.D.

Pediatrician

LAWSON WILKINS, M.D.

Neurological Surgeon

CHARLES BAGLEY, M.D.

Psychiatrists

ESTHER L. RICHARDS, M.D.

Orthopaedist

H. L. WHEELER, M.D.

Proctologist

MONTE EDWARDS, M.D.

Assisting Visiting Physician

CHARLES R. AUSTRIAN, M.D.

Assistant Visiting Surgeons

FRANK S. LYNN, M.D.

C. A. REIFSCHNEIDER, M.D.

E. M. HANRAHAN, A.B., M.D.

T. B. AYCOCK, M.D.

L. U. LUMPKIN, M.D.

Assistant Neurologist

O. R. LANGWORTHY, M.D.

Assistant Physician—Tuberculosis

HENRY C. SMITH, M.D.

Ophthalmologist

CECIL BAGLEY, M.D.

Obstetrician

LOUIS H. DOUGLAS, M.D.

Dermatologist

ISAAC R. PELS, M.D.

Roentgenologist

JOHN W. PIERSON, M.D.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL
SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN

This institution is situated on an estate of 75 acres at Hillsdale. The site is just within the northwestern city limits and of easy access from the city proper.

The location is ideal for the treatment of children, in that it affords all the advantages of sunshine and country air.

A modern hospital building has just been completed, with every facility for operative treatment and physiotherapy of all types of bone and joint affections.

The hospital is equipped with 82 beds—endowed, and city and state supported.

The Children's Orthopaedic Dispensary at University Hospital is maintained in closest affiliation and cares for the cases discharged from the Kernan Hospital. The physiotherapy department is very well equipped with modern apparatus and trained personnel.

STAFF

Surgeon-in-Chief and Medical Director

ROBERT W. JOHNSON, JR., A.B., M.D.

Attending Orthopaedic Surgeon

ALBERTUS COTTON, A.M., M.D.

Associate Orthopaedic Surgeons

MOSES GELLMAN, B.S., M.D.

HARRY L. ROGERS, M.D.

Consulting Surgeons

J. M. T. FINNEY, A.B., M.D., D.S.M., F.R.C.S. (Eng. Ire.) Hon.

ARTHUR M. SHIPLEY, Sc.D., M.D.

Plastic Surgeon

JOHN STAIGE DAVIS, B.Sc., M.D.

Neurologic Surgeon

CHARLES BAGLEY, JR., A.B., M.D.

Consulting Oculist and Aurist

ALAN C. WOODS, M.D.

Oculist and Aurist
WILLIAM TARUN, M.D.

Laryngologist
EDWARD A. LOOPER, M.D.

Assistant Laryngologists
F. B. ANDERSON, M.D. ALLEN HOLDEN, M.D.
EVERETT L. BISHOP, M.D. MARSHALL P. BYERLY, M.D.

Dentists
JOHN WOLF, D.D.S.

Consulting Physicians
LEWELLYS F. BARKER, A.B., M.D. THOMAS R. BROWN, A.B., M.D.
THOMAS B. FUTCHER, A.B., M.D. WILLIAM S. THAYER, A.B., M.D.

Pediatrist
BENJAMIN TAPPAN, A.B., M.D.

Dermatologist
JOHN R. ABERCROMBIE, A.B., M.D.

Pathologist
SYDNEY M. CONE, A.B., M.D.

Attending Pathologist
HOWARD J. MALDEIS, M.D.

Neurologist
IRVING J. SPEAR, M.D.

Superintendent
MISS GERTRUDE FORRESTER, R.N.

Dispensary and Social Service Nurse
MISS MABEL S. BROWN, R.N.

Physiotherapist, Masseuse and Instructor in Corrective Gymnastics
MRS. GEORGIANA WISONG

Roentgenologists
ALBERTUS COTTON, A.M., M.D. MRS. GEORGIANA WISONG

Instructors in Grammar School
MISS MARY H. LEE, *Principal* MISS MARY SAMPSON, *Assistant*

Superintendent
MISS C. GERTRUDE FORRESTER, R.N.

ST. VINCENT'S INFANT ASYLUM

The facilities of this institution, containing 250 infants and children, have been kindly extended to the University of Maryland by the Sisters of Charity. This large clinic enables this school to present to its students liberal opportunities for the study of diseases of infants and children.

STAFF

Obstetrician

L. H. DOUGLASS, M.D.

Pediatricians

W. C. BACON, M.D.

C. L. JOSLIN, M.D.

CLEWELL HOWELL, M.D.

Surgeon

N. WINSLOW, M.D.

Dermatologist

J. A. BUCHNESS, M.D.

Oculists

C. A. CLAPP, M.D.

F. B. ANDERSON, M.D.

Orthopaedic Surgeon

H. L. WHEELER, M.D.

Physician

C. P. CLAUTICE, M.D.

Epidemiologist

M. E. BALLARD, M.D.

LIBRARIES

The University Library, founded in 1813 by the purchase of the collection of Dr. John Crawford, now contains 33,644 volumes, a file of 90 current medical journals, and several thousand pamphlets and reprints. It is well stocked with recent literature, including books and periodicals of general interest. The home of the Library is Davidge Hall, a comfortable and commodious building in close proximity to the classrooms and the laboratories of the Medical Department. The Library is open daily during the year for use of members of the Faculty, the students, and the profession generally.

The Library of the Medical and Chirurgical Faculty of Maryland, containing 42,000 volumes, is open to the students of the school. The leading medical publications of the world are received by the Library, and complete sets of many journals are available. Other Libraries of Baltimore are the Peabody (233,902 volumes) and the Enoch Pratt Free Library (600,000 volumes).

All these Libraries are open to the students of the school without charge.

ORGANIZATION OF THE CURRICULUM

The following curriculum is the result of a thorough revision of teaching in this school in order to meet modern requirements. The multiplication of specialties in medicine and surgery necessitates a very crowded course and the introduction of electives will very soon be depended on to solve some of the difficulties.

The curriculum is organized under eleven departments:

1. Anatomy (including Histology and Embryology).
2. Physiology.
3. Bacteriology and Immunology.
4. Biological Chemistry.
5. Pharmacology and Materia Medica.
6. Pathology.
7. Medicine (including Medical Specialties).
8. Surgery (including Surgical Specialties).
9. Obstetrics.
10. Gynecology.
11. Ophthalmology and Otology.

The instruction is given in four years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures and functions of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in Medicine and Surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insures attention to the needs of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

DEPARTMENT OF ANATOMY, INCLUDING HISTOLOGY AND EMBRYOLOGY

C. L. DAVIS, M.D.....	Professor of Anatomy
EDUARD UHLENHUTH, Ph.D.....	Professor of Gross Anatomy
JOHN F. LUTZ, M.D.....	Associate in Histology
FRANK H. FIGGE, B.S.....	Instructor in Anatomy
THOMAS B. AYCOCK, S.B., M.D.....	Instructor in Anatomy
MONTE EDWARDS, M.D.....	Instructor in Anatomy
JOSEPH POKORNY, M.D.....	Instructor in Histology
J. HULLA, M.D.....	Instructor in Histology
H. S. RUBENSTEIN.....	Instructor in Anatomy
R. W. JOHNSON, M.D.....	Assistant in Histology

GROSS ANATOMY. *First Year.* Thirty-eight hours a week for 16 weeks. The entire course centers around the dissection of the human body. Each student is given opportunity to dissect an entire half (left or right) of the body. The dissection is supplemented by lectures and informal discussions. (One lecture a week for five weeks.)

Anatomy is taught as an independent science, emphasis being laid on the human species as contrasted with animal morphology. An attempt is made to familiarize the student with the elements of anthropometry, with systematic and regional anatomy, with the principles of topographical anatomy and with osteology.

The actual dissection is preceded by a general examination of the body surface and superficial organs. Opportunity is provided for taking representative measurements of the head, face, trunk and limbs and of acquiring a knowledge of using anthropometric instruments. Throughout the dissection the student is encouraged to take measurements and weights of all the major organs, including the brain and the endocrines, and to obtain a knowledge of the proportions of each organ to the body as a whole as well as to the variability of these proportions.

The dissection is undertaken in relation to topographical regions of the body, but systematic relations are continuously emphasized and, wherever possible, brought out by actual dissection.

Osteology is taught in conjunction with the dissection of the muscles and the study of the functional mechanism of the skeleto-muscular apparatus. Each student is provided with a set of

bones to aid him in his homework. A charge of \$6 is made for each set, \$4 of which is returned at the end of the year, while the remaining \$2 are used for the upkeep of old and the purchase of new skeletal material. Fifty complete and perfect skeletons of the whole body and about as many of the limbs are available for reference and special advanced work.

At the end of the course the entire work is reviewed in a series of lectures presenting the entire anatomical basis of the most representative physiological activities, such as respiration, secretion, digestion, endocrine activity, parturition, etc.

Second, Third and Fourth Years. Opportunity is provided for advanced special dissections and for research work in every branch of anatomy. Dr. Uhlenhuth.

Total assigned hours, Gross Anatomy 472.

Histology and Embryology

First Year. Lectures, recitations and laboratory work, twelve hours each week for sixteen weeks. Histology and embryology are taught as a common subject, the histogenesis of a part preceding its histological study. (Lectures 20 hours; Laboratory 162 hours.)

The most important part of the work is done in the laboratory, where each student is provided with apparatus, staining fluids and material necessary for the preparation of specimens for microscopical examination. An important aid to the course is the projection microscope and balopticon which are used for the projection upon a screen of magnified images of the specimens actually used in the laboratory, and of illustrations from standard textbooks.

Each student is provided with a loan collection of histological slides, for which a deposit of \$10 is required. This deposit is refunded upon the return of the slides in a satisfactory condition. Dr. Davis and Dr. Lutz.

Neuro-Anatomy

During the second semester 36 hours are devoted to an elementary course in Neuro Anatomy. The human brain is dissected and microscopical sections of representative levels of the brain stem studied. Laboratory talks and lantern slide demonstration supplement the students work, the entire course being

based on an effort to familiarize the student with the structure of the central nervous system as applied to its physiology. Dr. Davis. (Lectures 12 hours; Laboratory 24 hours.)

Graduate Courses

Anat. 101 f. (Minor). Human Gross Anatomy (10)—Five lectures, eighteen laboratory hours during October, November, December and January; three lectures and fifteen laboratory hours during February.

A complete dissection of the human body (exclusive of the central nervous system). Dr. Uhlenhuth and Dr. Aycock.

Anat. 102 f. (Minor). Mammalian Histology (6) One lecture, 11 laboratories.

A general survey of the histological structure of the organs of mammals and man. Opportunity is offered for examining and studying a complete collection of microscopical sections. Dr. Davis and Dr. Lutz.

Anat. 103 s. (Minor). Human Neurology (2)—3 lectures, 6 laboratory hours during May.

An elementary study of the human central nervous system.

This course is an introduction to the general structure of the central nervous system mainly directed towards the fibre tracts and the nuclei contained therein. It includes a brief study of the eye and the internal ear. The laboratory work is based on a systematic dissection of the human brain. Dr. Davis and Dr. Rubenstein.

Anat. 204 s. (Major). Advanced Neurology (4)—2 lectures, 4 laboratory hours April 1st to May 30th.

This is intended to amplify the minor course in neurology especially with reference to the anatomical structure and relations to the cranial nerves, and is essential to more advanced study in neurology. It consists essentially of a study of the brain stem. The laboratory work acquaints the student with the subject through the medium of appropriately prepared microscopic sections of the human brain stem. Neurology 103 s. or its equivalent is a prerequisite for this course. Dr. Davis.

Anat. 205 f. and s. (Major). For work leading to a Ph. D. in Anatomy. A study of neurological problems based on 103 s. and 204 s. Only students who have had preceding courses in neurology are eligible for this work. Dr. Davis.

Anat. 205 s. (*Major*). Comparative Morphology of the Endocrine Glands (at least 2) 1 lecture, 2 laboratory hours.

With the aid of preparations the comparative anatomy, histology and cytology of the endocrines of the vertebrates, including man, are studied. In addition the student is required to make a number of preparations.

It is intended to give the student appreciation of the structural basis of the physiological activity of the endocrine glands and of the gradual building up of the endocrine system during phylogenetic development from the lower vertebrates to man, making it possible to see the variations in the endocrines of higher vertebrates in the light of the phylogenetic potentiality of these organs. Dr. Uhlenhuth and Mr. Figge.

Anat. 207 f. and s. (*Major*). Advanced Endocrinology. (Credit and time dependent upon the student's qualifications.)

A study of the morphological equivalent of function. By means of proper experimentation the morphological responses of the endocrines to extrinsic and intrinsic factors are examined. This course will lead the student toward work for the Ph. D. in Anatomy. Dr. Uhlenhuth.

DEPARTMENT OF PHYSIOLOGY

FERDINAND A. RIES, M.D.

Associate Professor of Physiology and Acting Head of the Department

CHARLES C. CONSER, M.D. Associate Professor of Physiology

O. G. HARNE, A.B. Associate in Physiology

ELIZABETH PAINTER, A.B. Assistant in Physiology

Second Year. Lectures, laboratory and recitations are given in the physiology of muscle and nerve, central nervous system, and digestion and secretion, followed by work on blood, circulation, internal secretions, special senses, respiration and metabolism.

Lectures and recitations.....	96 hours
Laboratory	144 hours
Total	240 hours

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

FRANK W. HACHTEL, M.D.....	Professor of Bacteriology
J. A. F. PFEIFFER, M.D.....	Instructor in Bacteriology
HENRY F. BUETTNER, M.D.....	Instructor in Bacteriology
H. E. LEVIN, M.D.....	Assistant in Bacteriology

Instruction in bacteriology is given in the laboratory to the students of the second year during the first semester. This includes the various methods of preparation and sterilization of culture media, the study of pathogenic bacteria and the bacteriological examination of water and milk. The bacteriological diagnosis of the communicable diseases is also included in this course. Animal inoculations are made in connection with the bacteria studied. The most important protozoa are also studied in the laboratory. The principles of general bacteriology are taught by quiz, conference and lecture.

The principles of immunology are presented by means of quizzes, conferences and lectures to the second-year class throughout the second semester, and practical experiments are carried out by the class in laboratory sessions.

	Bacteriology	Immunology
Lectures and recitations	16 hours	16 hours
Laboratory	128 hours	96 hours
Total	144 hours	112 hours

DEPARTMENT OF BIOLOGICAL CHEMISTRY

H. BOYD WYLIE, M.D.....	Professor in Biological Chemistry
FRANK N. OGDEN, M.D.....	Associate in Biological Chemistry
EMIL G. SCHMIDT, Ph.D.....	Associate in Biological Chemistry
RUTH F. CARR, B.S.....	Assistant in Biological Chemistry

This course is designed to present the fundamental concepts of Biological Chemistry. The principal constituents and the phenomena of living matter are discussed in the lectures and studied in the laboratory. Training is afforded in routine biochemical methods of investigation.

Lectures	76 hours
Conferences	20 hours
Laboratory	96 hours
Total	192 hours

PHARMACOLOGY AND MATERIA MEDICA

WILLIAM HENRY SCHULTZ, Ph.B., Ph.D.....	Professor of Pharmacology
RUTH MUSSEY, B.A.....	Instructor in Pharmacology
WILLIAM ELLSWORTH EVANS, B.A., M.A.....	Assistant in Pharmacology
JOSEPH MILLETT, Ph.G., Ph.C., B.S.....	Assistant in Pharmacology
WILLIAM GLENN HARNE.....	Demonstrator in Pharmacology

ISAAC E. EMERSON FELLOWS IN PHARMACOLOGY

HERMAN SCHROEDER, M.D., Ph.D.

FELIX STEIGERWALDT, Ph. D.

1. MATERIA MEDICA AND PHARMACOLOGY. The prerequisites to this and the following courses in pharmacology are college chemistry, pharmaceutical and biological chemistry. Special courses in physical and colloidal chemistry are highly recommended.

2. SYSTEMATIC PHARMACOLOGY. Second year. In teaching medical students the aim is to attain a mean between that which has a purely scientific bearing and that dominantly practical, so that both a critical attitude toward drugs and an understanding of the principles of dosage may be acquired. This is accomplished by lectures, quizzes, conferences and the following course of laboratory exercises.

3. PHARMACODYNAMICS. Second Year. This laboratory course runs parallel with Pharmacology 2.

In the first part of the course the experiments are upon normal animals (anaesthetised). Special emphasis is laid upon technic and upon the student's ability to record and properly analyze the results.

The second half of the course partakes more of the character of experimental medicine. Pathological animals are treated with chemotherapeutic agents and the toxicity of the drug for the host and for the parasite are studied. Students who by this time have demonstrated ability and initiative are encouraged to do intensive work along lines of special interest.

4. PHARMACOLOGY OF GENERAL AND LOCAL ANAESTHETICS AND SOPORIFICS. Four weeks; three lectures, three laboratory periods a week. This is a special course designed to meet the

needs of physician and graduate nurse who wish to acquire a knowledge of the more recent developments in the pharmacology of depressant and sleep-producing drugs. The course is so arranged that those properly qualified may continue the work under expert anesthetists in the wards of the hospitals connected with the university. Dr. Schultz.

Properly qualified students may be admitted, at the discretion of the head of the Department, to work outlined under graduate courses.

Materia Medica and Prescription Writing

Lectures	20 hours
Conferences	10 hours
Laboratory	30 hours

Pharmacology

Lectures	40 hours
Conferences	25 hours
Laboratory	102 hours

Graduate Courses

All students majoring in Pharmacology with a view to securing the degree of Master of Arts or Doctor of Philosophy should secure special training in Mammalian Physiology, Organic Chemistry 202 y, and Physical Chemistry 10 y or preferably 102 f.

Pharmacology 108 f. and s. (Minor). General Pharmacology (7), 3 lectures, 7 laboratory (January to May inclusive).

This course consists of 50 lectures and 40 laboratory periods of three hours each; offered each year, January to May inclusive, at Medical School. The fundamental principles of pharmacologic technic are taught in this course, hence it is a prerequisite for all other advanced courses in this subject. Dr. Schultz.

Pharmacology 209 f. (Major). The Pharmacology of Biologic Products.

This course involves problems of modern therapy that can be studied from the experimental physiological point of view, which includes such subjects as anaphylaxis, allergic reactions, anaphylactoid phenomena, non-specific protein therapy, toxins, anti-toxins, and glandular products.

The seminars, lectures, and demonstrations will be somewhat broad in scope, but the research will be intensive along some one chosen subject.

Offered in alternate years beginning with 1930. Credit dependent upon quality of work. Dr. Schultz.

Pharmacology 210 f. (Major). The pharmacology of industrial poisons, including insecticides and parasite remedies. The nature of the subject matter of this course will vary from year to year. Credit will depend upon the amount and quality of the work accomplished.

Offered in alternate years beginning in 1931. Dr. Schultz.

Pharmacology 211 f. (Major). Chemotherapy.

The action of new synthetic compounds from a pharmacodynamic point of view. Credit will depend upon the amount and quality of the work accomplished. Dr. Schultz.

Pharmacology 212 f. and s. (Major). Pharmacology Seminar—One report period each week.

DEPARTMENT OF PATHOLOGY

HUGH R. SPENCER, M.D.....	Professor of Pathology
STANDISH MCCLEARY, M.D.....	Professor of Pathology
SYDNEY M. CONE, M.D.....	Associate Professor of Pathology
ROBERT B. WRIGHT, M.D.....	Assistant Professor of Pathology
ALBERT E. GOLDSTEIN, M.D.....	Associate in Pathology
WALTER C. MERKLE, M.D.....	Associate in Pathology
C. GARDNER WARNER, M.D.....	Associate in Pathology
M. ALEXANDER NOVEY, M.D.....	Instructor in Pathology
WM. S. LOVE, JR., M.D.....	Instructor in Pathology
HOWARD M. BUBERT, M.D.....	Instructor in Pathology
LEON FREEDOM, M.D.....	Instructor in Pathology
MAURICE H. GOODMAN, M.D.....	Instructor in Pathology
BENJAMIN ABESHOUSE, M.D.....	Instructor in Pathology
M. C. PORTERFIELD, M.D.....	Instructor in Pathology
W. R. JOHNSON, M.D.....	Instructor in Pathology
FRANK J. GERAGHTY, M.D.....	Assistant in Pathology
MAURICE J. ABRAMS, M.D.....	Assistant in Pathology

Courses of instruction in Pathology are given during the second and third years. These courses are based on previous study of normal structure and function and aim to outline the natural history of disease. Instruction is made as practical as possible

that the student may become familiar with the appearance of tissues in disease and may be able to correlate anatomical lesions with clinical symptoms and signs.

1. GENERAL PATHOLOGY. (*Second Year.*) This course includes the study and demonstration of disturbances of the body fluids, disturbances of structure, nutrition and metabolism of cells, disturbances of fat, carbohydrate and protein metabolism, disturbances in pigment metabolism, inflammation and tumors.

2. APPLIED PATHOLOGY. INCLUDING GROSS MORBID ANATOMY AND MORBID PHYSIOLOGY. (*Third Year.*) In this course the special relation of lesions to clinical symptoms and signs is emphasized.

In the laboratory the class is divided into groups for the study of classified autopsy material.

3. AUTOPSIES. (*Third Year.*) Small groups of students attend autopsies at the morgues of the University Hospital and Baltimore City Hospital. They are required to assist at autopsies and to prepare protocols.

4. CLINICAL PATHOLOGY CONFERENCE. (*Fourth Year.*) In collaboration with the Department of Medicine. Material from autopsies is studied with reference to the correlation of the clinical aspects with the pathological findings.

5. ADVANCED WORK IN PATHOLOGY. Properly qualified students will be permitted to carry out advanced or research work along the lines of experimental pathology.

SUMMARY

Second Year	
Lectures	60 hours
Laboratory	150 hours
Total	210 hours
Third Year	
Lectures	60 hours
Laboratory	120 hours
Total	180 hours
Fourth Year	
Clinical Pathological Conference.....	30 hours

DEPARTMENT OF MEDICINE

MAURICE C. PINCOFFS, B.S., M.D.	Professor of Medicine
GORDON WILSON, M.D.	Professor of Medicine
STANDISH MCCLEARY, M.D.	Professor of Pathology and Clinical Medicine
JOS. E. GICHNER, M.D.,	Professor of Clinical Medicine and Physical Therapeutics
G. CARROLL LOCKARD, M.D.	Professor of Clinical Medicine
HARVEY G. BECK, Sc.D., M.D.	Professor of Clinical Medicine
HARRY M. STEIN, M.D.	Professor of Clinical Medicine
PAUL W. CLOUGH, B.S., M.D.	Associate Professor of Medicine
C. C. W. JUDD, A.B., M.D.	Associate Professor of Medicine
SYDNEY R. MILLER, M.D.	Associate Professor of Medicine
WALTER A. BAETJER, A.B., M.D.	Associate Professor of Medicine
WM. H. SMITH, M.D.	Associate Professor of Clinical Medicine
H. J. MALDEIS, M.D.	Associate Professor of Medical Jurisprudence
S. LLOYD JOHNSON, M.D.	Assistant Professor of Medicine
JOHN G. HUCK, M.D.	Assistant Professor of Medicine
GEORGE MCLEAN, M.D.	Assistant Professor of Medicine
C. C. HABLSTON, M.D.	Assistant Professor of Medicine
L. A. M. KRAUSE, M.D.	Assistant Professor of Medicine
H. R. PETERS, M.D.	Assistant Professor of Medicine
H. M. BUBERT, M.D.	Associate in Medicine
W. S. LOVE, JR., A.B., M.D.	Associate in Medicine
WILLIAM MICHEL, M.D.	Instructor in Medicine
M. G. GICHNER, M.D.	Instructor in Medicine
WILLIAM A. STRAUSS, M.D.	Instructor in Medicine
HENRY SHEPPARD, M.D.	Instructor in Medicine
WETHERBEE FORT, M.D.	Instructor in Medicine
J. S. EASTLAND, M.D.	Instructor in Medicine
R. HOOPER SMITH, M.D.	Instructor in Medicine
T. NELSON CAREY, M.D.	Instructor in Medicine
THOMAS C. WOLFE, M.D.	Instructor in Medicine
C. E. GILL, M.D.	Instructor in Medicine
HENRY C. SMITH, M.D.	Assistant in Medicine
NATHANIEL BECK, M.D.	Assistant in Medicine
CARL BENSON, M.D.	Assistant in Medicine
F. S. WAESCHE, M.D.	Assistant in Medicine
A. SCAGNETTI, M.D.	Assistant in Medicine
EARL T. CHAMBERS, M.D.	Assistant in Medicine
SAMUEL T. HELMS, M.D.	Assistant in Medicine
BERNARD COHEN, M.D.	Assistant in Medicine
L. P. GUNDRY, M.D.	Assistant in Medicine

GENERAL OUTLINE

SECOND YEAR

Introduction to clinical medicine.

- (a) Introductory physical diagnosis.
(3 hours a week, first semester.)
- (b) Medical clinics.
(1 hour a week, second semester.)

THIRD YEAR

I. The methods of examination (13 hours a week).

- (a) History taking.
- (b) Physical diagnosis.
- (c) Clinical pathology.

These subjects are taught and practiced in the out-patient department and in the clinical laboratory.

II. The principles of medicine (7 hours a week).

- (a) Lectures, clinics and demonstrations in general medicine, neurology, pediatrics and preventive medicine.

III. The principles of therapeutics (2 hours a week).

Lectures and demonstrations in general therapeutics, physical therapeutics and materia medica.

FOURTH YEAR

The practice of medicine.

I. Clinical clerkship on the medical wards.

(26 hours a week for ten weeks.)

- (a) Responsibility, under supervision, for the history, physical examination, laboratory examination and progress notes of assigned cases.
- (b) Ward classes in general medicine, the medical specialties, and therapeutics.

II. Clinics in general medicine and the medical specialties.

(6 hours a week.)

III. Dispensary work in the medical specialties.

IV. Clinical pathological conferences (1 hour a week.)

Medical Dispensary Work

The medical dispensaries of both the Mercy and the University Hospitals are utilized for teaching in the third year. Each student spends two periods a week of two hours each in dispensary work.

The work is done in groups of four to six students under an instructor. Systematic history-taking is especially stressed. Physical findings are demonstrated. The student becomes familiar with the commoner acute and chronic disease processes.

Physical Diagnosis

Second Year. Didactic lectures and practical demonstrations in topographical anatomy and normal physical signs.

Third Year. The class is divided into small groups, and each section receives instruction for four hours a week for the entire session in the medical dispensaries of the hospitals. The large clinical material of the dispensaries and hospitals is utilized to give each student the opportunity to familiarize himself with the common types of bodily structure, with the normal variations in physical signs and with the physical signs of the chief pulmonary, circulatory and abdominal diseases.

Therapeutics

Third Year. General therapeutics and materia medica are taken up and an effort is made to familiarize the student with the practical treatment of disease. The special therapy of the chief diseases is then reviewed. One hour a week. Dr. Lockard.

The principles of physical therapy are taught in a special lecture and demonstration course consisting of six one-hour periods. Dr. Gichner.

Fourth Year. Special consideration is given to the practical application of therapeutic principles in bedside teaching and the chief therapeutic methods are demonstrated.

Tuberculosis

During the third year in connection with the instruction in physical diagnosis a practical course is given weekly to sections of the class at the Municipal Tuberculosis Hospital. Stress is laid upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

Syphilis

Third Year. During the third year the subject of syphilis is dealt with in the lecture course.

Fourth Year. An elective course in the therapeutic management of syphilis is offered in the dispensary.

CLINICAL PATHOLOGY

JOHN G. HUCK, M.D.....	Assistant Professor of Medicine
	Head of Department of Clinical Pathology
H. J. MALDEIS, M.D.....	Associate Professor of Medical Jurisprudence
M. G. GICHNER, M.D.....	Instructor in Medicine
WILLIAM A. STRAUSS, M.D.....	Instructor in Medicine
R. HOOPER SMITH, M.D.....	Assistant in Medicine

During the third year the student is thoroughly drilled in the technic of the usual clinical laboratory work, so that he is able to perform all routine examination which may be called for during his fourth year, in connection with the work in the wards and dispensary.

The practical work is supplemented by a series of didactic lectures and demonstrations in which the entire teaching staff of the department takes an active part. The microscopical and chemical study of blood, exudates and transudates, gastric juice, spinal fluid, feces and urine are successively taken up, and special attention directed to the clinical significance of the findings.

Clinical parasitology from the standpoint of the infecting agent and the carrier is given careful consideration.

The entire course is thoroughly practical. Each student has his own microscope and is provided with blood counters and hemoglobinometer for his exclusive use, and every two students with a special laboratory outfit for all routine purposes.

During the fourth year the student applies what he has learned during the preceding year in the laboratories of the various affiliated hospitals. He is also supplied with a laboratory outfit which is sufficiently complete to enable him to work independently of the general equipment. Special instructors are available during certain hours to give necessary assistance and advice.

Lectures	32 hours
Laboratory	96 hours
Total	<hr/> 128 hours

GASTRO-ENTEROLOGY

JULIUS FRIEDENWALD, A.M., M.D.....	Professor of Gastro-Enterology
T. FRED LEITZ, M.D.....	Clinical Professor of Gastro-Enterology
J. HARRY ULLRICH, M.D.....	Associate Professor of Gastro-Enterology
THEODORE H. MORRISON, M.D.....	Associate Professor of Gastro-Enterology
MAURICE FELDMAN, M.D.....	Assistant Professor of Gastro-Enterology
ZACHARIAH MORGAN, M.D.....	Associate in Gastro-Enterology
JOSEPH SINDLER, M.D.....	Associate in Gastro-Enterology
M. S. KOPPELMAN, M.D.....	Instructor in Gastro-Enterology
ISIDORE I. LEVY, M.D.....	Instructor in Gastro-Enterology
C. VANCE HOOPER, M.D.....	Assistant in Gastro-Enterology

Fourth Year. Clinics, recitations and demonstrations to the class for one hour a week throughout the session. Dispensary instruction to small groups throughout the entire session. Practical instruction in the differential and clinical diagnosis and demonstrations of the newer methods of diagnosis in gastro-intestinal affections.

PSYCHIATRY

R. M. CHAPMAN, M.D.....	Professor of Psychiatry
H. S. SULLIVAN, M.D.....	Associate Professor of Psychiatry
RALPH TRUITT, M.D.....	Assistant Professor of Psychiatry
LEWIS B. HILL, M.D.....	Associate in Psychiatry
HARRY GOLDSMITH, M.D.....	Instructor in Psychiatry

Third Year. In the third year the student attends fifteen clinical lectures and five clinics which are designed to be introductory to the more intensive work in psychiatry in the fourth year.

Fourth Year. The class is divided into sections for clinical conferences on selected groups of cases. Each student may work for a short period as assistant in the Mental Hygiene Clinic, and thus gain practical experience of the problems of history-taking, examination, and the care of psychiatric patients.

PEDIATRICS

EDGAR B. FRIEDENWALD, M.D.....	Professor of Clinical Pediatrics
C. LORING JOSLIN, M.D.....	Professor of Clinical Pediatrics
JOHN H. TRABAND, M.D.....	Assistant Professor of Pediatrics
CLARENCE E. MACKE, M.D.....	Assistant Professor of Pediatrics
ALBERT JAFFE, M.D.....	Assistant Professor of Pediatrics
WILLIAM J. TODD, M.D.....	Associate in Pediatrics
WILLIAM G. GEYER, M.D.....	Associate in Pediatrics
CLEWELL HOWELL, M.D.....	Associate in Pediatrics
SAMUEL S. GLICK, M.D.....	Associate in Pediatrics
F. STRATNER OREM, M.D.....	Instructor in Pediatrics
FREDERICK B. DART, M.D.....	Instructor in Pediatrics
FREDERICK SMITH, M.D.....	Instructor in Pediatrics
R. M. HENING, M.D.....	Instructor in Pediatrics
MARIE KOVNER, M.D.....	Instructor in Pediatrics
A. H. FINKELSTEIN, M.D.....	Instructor in Pediatrics
W. T. SCHMITZ, M.D.....	Assistant in Pediatrics
S. C. FELDMAN, M.D.....	Assistant in Pediatrics
M. PAUL BYERLY, M.D.....	Assistant in Pediatrics
LOUIS T. LAVY, M.D.....	Assistant in Pediatrics
WALTER B. JOHNSON, M.D.....	Assistant in Pediatrics

Third Year. Instruction during the third year consists of one lecture each week in which infant feeding and the most important diseases of infancy and childhood are especially emphasized. Drs. Joslin and Friedenwald.

Fourth Year. During this year a weekly clinical lecture is given where the character of disease is fully demonstrated and the students are afforded an opportunity for personal examination of all patients. In addition, ward classes are held weekly where bedside instruction is given. A section of the class also works daily at the Babies' and Children's Clinic. This clinic, which is under the direction of Dr. Joslin, has a yearly attendance of more than twenty thousand, and offers an excellent opportunity for study and observation of a wide variety of conditions under competent instructors.

Instruction is also given on the Children's Ward at the Mercy Hospital.

NEUROLOGY

IRVING J. SPEAR, M.D.....	Professor of Neurology
ANDREW C. GILLIS, A.M., M.D., LL.D.....	Professor of Neurology
G. M. SETTLE, A.B., M.D.,	
Associate Professor of Neurology and Clinical Medicine	
BENJAMIN PUSHKIN, M.D.....	Associate Professor of Clinical Neurology
MILFORD LEVY, M.D.....	Assistant Professor of Neurology
LEON FREEDOM, M.D.....	Associate in Neurology

Third Year. Lectures and recitations one hour each week to the entire class. Instruction in clinical neurology two hours a week at the City Hospital to small groups. By means of didactic lectures and clinical conferences, there are considered the commoner types of diseases of the nervous system, the methods of neurological examination, and the relationship of signs and symptoms to pathological conditions. The material at the University and Mercy Hospitals is available.

Fourth Year. Clinical conference one hour each week to the entire class. This subject is taught at the University and Mercy Hospitals. All patients presented at these clinics are carefully examined; complete written records are made by the students who demonstrate the patients before the class. The patients are usually assigned one or two weeks before they are presented, and each student in the class must prepare one or more cases during the year.

WARD CLASS INSTRUCTION. In small sections at the University and Mercy Hospitals. In these classes the students come in close personal contact with the patients in the wards under the supervision of the instructor.

DISPENSARY INSTRUCTION. Small sections are instructed in the dispensaries of the University and Mercy Hospitals four afternoons each week. In this way students are brought into contact with nervous diseases in their earlier as well as later manifestations.

HYGIENE AND PREVENTIVE MEDICINE

C. HAMPSON JONES, M.D., C.M.....	Professor of Hygiene and Public Health
V. L. ELLICOTT, M.D.....	Instructor in Hygiene and Public Health
M. G. TULL, M.D.....	Instructor in Hygiene and Public Health

Third Year. Two lectures a week throughout the session. The lectures will encompass the fundamental subjects: air, water, soil, food, disposal of wastes, communicable diseases, state and federal public health laws, and industrial diseases. Small groups visit the Sydenham Hospital weekly and are given practical instruction in the diagnosis, treatment and isolation of the contagious diseases.

Fourth Year. Demonstrations and discussion of Health Department work with emphasis on those phases which concern the practicing physician. The class is divided into small groups, each group making five visits to the Health Department of one to one and a half hours each.

MEDICAL JURISPRUDENCE

H. J. MALDEIS, M.D.....	Associate Professor of Medical Jurisprudence Baltimore City Post Mortem Physician
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Fourth Year. One hour each week for one semester. (16 lecture hours.)

Inasmuch as Medical Jurisprudence teaches the application of every branch of medical knowledge to the needs of the law, civil or criminal, this course embraces the following: Proceedings in criminal and civil prosecution; medical evidence and testimony; identity and its general relations; sexual abnormalities; personal identity; impotence and sterility; rape; criminal abortions; signs of death; wounds in their medico-legal relations; death, natural and homicidal; malpractice; insanity and medico-legal autopsies.

DEPARTMENT OF SURGERY

ARTHUR M. SHIPLEY, Sc.D., M.D.....	Professor of Surgery
ALEXIUS MCGLANNAN, A.M., M.D.....	Professor of Surgery
NATHAN WINSLOW, A.M., M.D.....	Clinical Professor of Surgery
PAGE EDMUNDS, M.D.....	Clinical Professor of Industrial Surgery
WALTER D. WISE, M.D.....	Clinical Professor of Surgery
FRANK S. LYNN, M.D.....	Clinical Professor of Surgery
ELLIOTT H. HUTCHINS, A.M., M.D.....	Clinical Professor of Surgery
CHARLES REID EDWARDS, M.D.....	Clinical Professor of Surgery
THOMAS R. CHAMBERS, A.M., M.D.....	Associate Professor of Surgery
R. W. LOCHER, M.D.....	Associate Professor of Clinical Surgery
A. M. EVANS, M.D.....	Associate Professor of Surgery
F. L. JENNINGS, M.D.....	Associate Professor of Surgery
E. S. JOHNSON, M.D.....	Associate Professor of Surgery
E. H. HAYWARD, M.D.....	Associate in Surgery
C. A. REIFSCHNEIDER, M.D.....	Associate in Surgery
M. J. HANNA, M.D.....	Associate in Surgery
H. M. FOSTER, M.D.....	Associate in Surgery
D. J. PESSAGNO, M.D.....	Associate in Surgery
C. F. HORINE, M.D.....	Associate in Surgery
I. O. RIDGLEY, M.D.....	Associate in Surgery
H. F. BONGARDT, M.D.....	Associate in Surgery
W. R. JOHNSON, M.D.....	Instructor in Surgery
E. M. HANRAHAN, A.B., M.D.....	Instructor in Surgery
THOMAS B. AYCOCK, A.B., M.D.....	Instructor in Surgery
S. DEMARCO, M.D.....	Instructor in Surgery
CLYDE MARVEL, M.D.....	Instructor in Surgery
KARL J. STEINMULLER, A.B., M.D.....	Instructor in Surgery
DWIGHT MOHR, M.D.....	Assistant in Surgery
WM. R. GERAGHTY, M.D.....	Assistant in Surgery
H. M. McELWAIN, M.D.....	Assistant in Surgery
J. G. ONNEN, M. D.....	Assistant in Surgery
A. V. BUCHNESS, M.D.....	Assistant in Surgery
ROBERT W. JOHNSON, M.D.....	Assistant in Surgery
T. J. TOUHEY, M.D.....	Assistant in Surgery
CLYDE F. KARNS, M.D.....	Assistant in Surgery
L. U. LUMPKIN, M.D.....	Assistant in Surgery
PAUL SCHENKER, M.D.....	Assistant in Surgery
CARL P. ROETLING, M.D.....	Assistant in Surgery
H. E. REIFSCHNEIDER, M.D.....	Assistant in Surgery

The teaching is done in the anatomical laboratory and the dispensaries, wards, clinical laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and operating rooms of the Baltimore City Hospitals.

Instruction is given by means of lectures, recitations, dispensary work, bedside instruction, ward classes, and clinics. The work begins in the second year, and continues throughout the third and fourth years.

Second Year

TOPOGRAPHIC AND SURGICAL ANATOMY. The course is designed to bridge the gap between anatomy in the abstract, and clinical anatomy as applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory, and students are required to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected when necessary to bring out outlines and relations of structures.

DIDACTIC LECTURES. Two hours a week for one semester, augmented by demonstrations with specimens, charts, and cross section. Dr. Hanna.

LABORATORY. Five hours a week for 16 weeks. Dr. Hanna, assisted by Dr. Johnson.

PRINCIPLES OF SURGERY. This course includes history-taking, records of physical examinations and of operations and progress notes; the preparation of surgical dressings, suture materials and solutions. It includes inflammation, infections, ulcers, gangrene, fistulae and sinuses, hemorrhage, shock and tumors; the use of splints, bed frames, bone plates, bone grafts, etc., local anaesthesia and the preparation of patients for operations. Lectures and conferences, two hours per week for one semester, to the entire class. Dr. Edwards.

Third Year

GENERAL AND REGIONAL SURGERY. Principles of surgery and general surgery, three hours a week throughout the year to the entire class, lectures, recitations and clinics. Drs. Shipley and Wise.

The class is divided into groups and receives instruction in history-taking, gross pathology, and surgical diagnosis—at the bedside and in the dead-house of the Baltimore City Hospitals. Drs. Shipley, Lynn, Reifschneider and Hanrahan.

OPERATIVE SURGERY. Instruction is given in operative surgery upon the cadaver and on dogs. The class is divided into sections, and each section is given practical and individual work under the supervision of the instructors. Dr. Lynn, assisted by Drs. Winslow, Hayward, E. S. Johnson, Foster, Geraghty, Demarco, Horine, Pessagno, Onnen, W. R. Johnson, Steinmueller, Sigrist and R. W. Johnson.

FRACTURES AND DISLOCATIONS. This course consists of instruction in the various forms of fractures, dislocations and their treatment. There is a regular schedule of didactic lectures, which is supplemented by practical demonstrations in diagnosis and treatment. This practical work is given at the Mercy, University and Baltimore City Hospitals. Drs. Lynn and Jennings.

SURGICAL DISPENSARY. Under supervision, the student takes the history, makes the physical examinations, attempts the diagnosis, and, as far as possible, carries out the treatment of the ambulatory surgical patients in the University and in the Mercy Hospitals. Mercy Hospital—Drs. Dwight Mohr, Ridgely, Touhey, Bongardt and McElwain. University Hospital—Drs. Lynn, Winslow, Edwards, E. S. Johnson and Foster.

Fourth Year

CLINICS. A weekly clinic will be given at the Mercy and at the University Hospitals to one-half the class throughout the year. As far as possible this is a diagnostic clinic. Mercy Hospital—Dr. McGlannan. University Hospital—Dr. Shipley.

SURGICAL PATHOLOGY. A weekly exercise of one hour at Mercy Hospital for one semester, at which specimens from the operating room and museum are studied in the gross and microscopically, in relation to the case history. Dr. McGlannan.

INDUSTRIAL SURGERY. Operative and post-operative treatment of accident cases, with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. Edmunds.

CLINICAL CLERKSHIP. The personal study of assigned hospital patients, under supervision of the staffs of University and of Mercy Hospitals, history-taking, and physical examination of

patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

WARD CLASSES. Ward class instruction in small groups will consist of ward rounds; surgical diagnosis, treatment and the after-care of operative cases. Mercy Hospital—Drs. McGlannan, Wise, Elliot Hutchins, Evans and Jennings. University Hospital—Drs. Shipley, Edmunds, Lynn and Edwards.

ANAESTHESIA

Second Year

Lectures on history of anaesthesia: Ancient and Modern. General physiology of anaesthesia. Special physiology of each anaesthetic agent. Different methods of producing general anaesthesia, with a detailed description of each. The selection of the anaesthetic and method best suited for its administration in particular cases. Difficulties and accidents during and following anaesthesia, their causes, prevention and control. Different methods of resuscitation. Blood pressure: Its significance and bearing on selection of the anaesthetic and use as a guide during anaesthesia.

Eight hours to the entire class. Drs. S. Griffith Davis and W. G. Queen.

Fourth Year

During the clinics and operations before small groups, each student will be required to observe the administration of anaesthetics and to keep a chart recording blood pressure, pulse and respiration under the direction of an instructor.

DERMATOLOGY

MELVIN ROSENTHAL, M.D.....	Professor of Dermatology
HARRY M. ROBINSON, M. D.....	Clinical Professor of Dermatology
JOHN R. ABERCROMBIE, A.B., M.D.....	Associate in Dermatology
FRANCIS ELLIS, A.B., M.D.....	Instructor in Dermatology
A. C. MONNINGER, M.D.....	Instructor in Dermatology
HARRY WASSERMAN, M.D.....	Instructor in Dermatology
M. H. GOODMAN, A.B., M.D.....	Instructor in Dermatology

Clinical conferences one hour each week to the entire class. This course will consist of demonstrations of the common diseases of the skin, in addition to a number of lectures on the general principles of Dermatology.

Dispensary instruction, University Hospital daily, in the diagnosis, and treatment of skin lesions, Drs. Robinson, Ellis, Goodman, Moninger. Mercy Hospital, Monday, Wednesday and Saturday, Dr. Rosenthal.

ORTHOPAEDIC SURGERY

ROBERT W. JOHNSON, JR., A.B., M.D.	Professor of Orthopaedic Surgery
ALBERTUS COTTON, A.M., M.D.	Professor of Orthopaedic Surgery
COMPTON RIELY, M.D.	Clinical Professor of Orthopaedic Surgery
HARRY L. ROGERS, M.D.	Associate in Orthopaedic Surgery
W. A. SIMPSON, A.B., M.D.	Associate in Orthopaedic Surgery
MOSES GELLMAN, M.D.	Associate in Orthopaedic Surgery
RAYMOND LENHARD, A.B., M.D.	Associate in Orthopaedic Surgery
CLEMENT R. MONROE, M.D.	Instructor in Orthopaedic Surgery
I. H. MASERITZ, M.D.	Assistant in Orthopaedic Surgery
J. G. BENESUNES, M.D.	Assistant in Orthopaedic Surgery

In this course didactic, clinical, bedside and out-patient instruction is given. This instruction is provided in the University Hospital Amphitheatre, Mercy Hospital and Dispensary, Kernan Hospital and Industrial School for Crippled Children, at "Radnor Park" and in the Dispensary of the University Hospital.

Lectures or clinics are held at each of the hospitals named in town once a week. In addition, a weekly bedside clinic is held for small sections of the class at "Radnor Park" and Mercy Hospital. Daily teaching in the Dispensary is stressed.

The course covers instruction in the special methods of examination, pathology, diagnosis and treatment in this specialty.

A brief outline and demonstration is also given of the apparatus employed in Physiotherapy, Muscle Training and Corrective Gymnastics.

ROENTGENOLOGY

HENRY J. WALTON, M.D.	Professor of Roentgenology
ALBERTUS COTTON, M.D.	Professor of Roentgenology
EUGENE L. FLIPPIN, M.D.	Instructor in Roentgenology

An effort is made to familiarize the student with the appearance of normal Roentgenograms, after which instruction is given in the interpretation of the more common pathological lesions seen on the X-ray films and fluroscopic screen. The history, physics and practical application of Roentgen Rays are alluded

to, but not stressed. Weekly demonstrations are given to sections of the fourth year class.

DIATHERMY AND RADIUM THERAPY

CHARLES REID EDWARDS, M.D.....Clinical Professor of Surgery

Students are taken in groups and are taught the indications for the use of radium in the treatment of malignant and non-malignant conditions. The course also includes the use of diathermy in the treatment of disease.

DISEASES OF THE NOSE AND THROAT

EDWARD A. LOOPER, M.D.....Professor of Diseases of the Nose and Throat

W. F. ZINN, M.D.....Clinical Professor of Diseases of the Nose and Throat

FRANKLIN B. ANDERSON, M.D.....Associate in Diseases of the Nose and Throat

R. F. MCKENZIE, M.D.....Instructor in Diseases of the Nose and Throat

F. A. HOLDEN, M.D.....Instructor in Diseases of the Nose and Throat

BIRCKHEAD MCGOWAN, M.D.....Assistant in Diseases of the Nose and Throat

THOMAS O'ROURKE, M.D.....Assistant in Diseases of the Nose and Throat

Third Year. Instruction to entire class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and modern methods of diagnosis. Lectures illustrated by lantern slides are given one hour weekly throughout the second semester by Dr. Looper.

Fourth Year. Dispensary instruction one and one-half hours daily, to small sections at the University and the Mercy Hospitals. The student is given opportunity to study, diagnose and treat patients under supervision. Ward classes and clinical demonstrations are given one and one-half hours weekly throughout the session in the University and the Mercy Hospitals.

The Looper Clinic, recently established in the University Hospital for bronchoscopy and esophagoscopy, affords unusual opportunities for students to study diseases of the larynx, bronchus and esophagus. The clinic is open to students daily from 2 to 4 P. M., under direction of Dr. Looper.

GENITO-URINARY DISEASES

W. H. TOULSON, A.B., M.Sc., M.D.,

Clinical Professor of Genito-Urinary Diseases

A. J. GILLIS, M.D.....Associate Professor of Genito-Urinary Diseases

HARRIS GOLDMAN, M.D.....Associate in Genito-Urinary Diseases

AUSTIN H. WOOD, M.D.....Associate in Genito-Urinary Diseases

L. K. FARGO, M.D.....Instructor in Genito-Urinary Diseases

L. J. MILLAN, M.D.....Instructor in Genito-Urinary Diseases

K. D. LEGGE, M.D.....Instructor in Genito-Urinary Diseases

Third Year. Eight hours to the entire class. This course is a didactic one in the principles of Genito-Urinary Surgery. Dr. Toulson.

Fourth Year. The course includes urethroscopy, cystoscopy, ureter catheterization, renal functional tests, urography, urine cultures, etc. The teaching consists of clinics in the amphitheater, ward rounds, and attendance by members of the Senior class upon out-patients in the dispensary. The dispensary classes are carried on both at the Mercy and the University Hospital dispensaries. Every variety of venereal disease is here encountered and this rich wealth of material is available for teaching purposes. In addition to this, a cystoscopic clinic is conducted in another part of the dispensary, where the students are given practical instruction in the modern diagnostic methods.

DISEASES OF THE COLON AND RECTUM

G. MILTON LINTHICUM, A.M., M.D.,

Professor of Diseases of Rectum and Colon

CHARLES F. BLAKE, M.D.....Professor of Diseases of Rectum and Colon

J. DAWSON REEDER, M.D.,

Associate Professor of Diseases of Rectum and Colon

L. J. ROSENTHAL, M.D.,

Associate Professor of Diseases of Rectum and Colon

MONTE EDWARDS, M.D.....Associate in Diseases of Rectum and Colon

Third Year. Six hours to the entire class. This course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and will cover the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Linthicum.

The class is divided into sections for clinical instruction in the Baltimore City Hospitals. Dr. Linthicum.

Fourth Year. Ward and Dispensary instruction is given in the University and Mercy Hospitals, where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope and examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Drs. Blake and Rosenthal. University Hospital—Drs. Linthicum, Reeder and Monte Edwards.

BRONCHOSCOPY AND ESOPHAGOSCOPY

WAITMAN F. ZINN, M.D.,

Clinical Professor of Diseases of the Nose and Throat

Clinical Lectures and Demonstrations once weekly at University and Mercy Hospitals.

Etiology, symtomatology, diagnosis and prophylaxis of foreign bodies in the air and food passages. Bronchoscopy as an aid in the diagnosis and treatment of diseases of the lungs. Bronchoscopy as an aid to the surgeon. Diseases of the trachea. Diseases of the esophagus. All the phases of these subjects that the general practitioner should know are demonstrated clinically.

OTOLOGY

J. W. DOWNEY.....Professor of Otology

FRANKLIN B. ANDERSON, M.D.....Associate in Otology

F. A. HOLDEN, M.D.....Instructor in Otology

The course in Otology is planned to teach a practical knowledge of the anatomy and physiology of the ear, its proximity and relationship to the brain and other vital structures. The inflammatory diseases, their etiology, diagnosis, treatment and complications are particularly stressed, with emphasis upon their relationship to the diseases of children, head-surgery and neurology.

Third Year. The entire class is given instruction by means of talks, anatomical specimens and lantern slides.

Fourth Year. Small sections of the class receive instruction and make personal examinations of patients under the direction of an instructor. The student is urged to make a routine examination of the ear in his ward work in general medicine and surgery.

ONCOLOGY

J. MASON HUNDLEY, JR., A.B., M.A., M.D.....	Associate in Gynaecology
GRANT E. WARD, A.B., M.D.....	Instructor in Surgery

Every facility for the diagnosis and treatment of neoplastic diseases is available; this includes Electro-Surgery, Radium Therapy and deep X-ray Therapy. Instruction for one hour a week to small groups of students is given in the history, physics and practical application of radium. Dr. Ward.

An out-patient clinic is held twice weekly which affords an opportunity for instruction to a limited number of students. The care of the General Surgical conditions is under the supervision of Dr. Ward. Dr. Hundley, has supervision of the Gynecological problems.

DEPARTMENT OF OBSTETRICS

J. M. H. ROWLAND, M.D.....	Professor of Obstetrics
L. H. DOUGLASS, M.D.....	Professor of Clinical Obstetrics
CHARLES E. BRACK, M.D.....	Clinical Professor of Obstetrics
J. MCF. BERGLAND, M.D.....	Associate Professor of Obstetrics
EMIL NOVAK, M.D.....	Associate Professor of Obstetrics
E. P. SMITH, M.D.....	Associate in Obstetrics
J. G. M. REESE, M.D.....	Associate in Obstetrics
M. A. NOVEY, A.B., M.D.....	Associate in Obstetrics
J. G. MURRAY, JR., A.B., M.D.....	Associate in Obstetrics
A. C. TIEMEYER, M.D.....	Associate in Obstetrics
ISADORE A. SIEGAL, A.B., M.D.....	Associate in Obstetrics
J. J. ERWIN, M.D.....	Instructor in Obstetrics
MARGARET B. BALLARD, M.D.....	Assistant in Obstetrics
DANIEL FISHER, M.D.....	Assistant in Obstetric

Third Year. Three lectures and recitations each week by Drs. Bergland, Novak, Murray, Douglass and Rowland to entire class.

MANIKIN WORK. Drs. Brack, Smith and Erwin to sections of class at Mercy Hospital, and Drs. Douglass, Siegel and Rowland at University Hospital.

Fourth Year. Clinical Conference. One hour each week. Drs. Rowland, Douglass and Murray.

WARD CLASSES. Six hours per week for five weeks to sections of class at University Hospital. Drs. Douglass, Reese and Novey.

Each member of the Senior class is required to deliver twelve women in their homes under supervision of the teaching and resident staff.

DEPARTMENT OF GYNECOLOGY

WILLIAM S. GARDNER, M.D.....	Professor of Gynecology
HUGH BRENT, M.D.....	Professor of Clinical Gynecology
ABRAM SAMUELS, M.D.....	Associate Professor of Gynecology
GEORGE A. STRAUSS, M.D.....	Associate in Gynecology
R. G. WILLSE, M.D.....	Associate in Gynecology
T. K. GALVIN, M.D.....	Associate in Gynecology
J. M. HUNDLEY, JR., M.D.....	Associate in Gynecology
LEO BRADY, M.D.....	Associate in Gynecology
E. E. EDLAVITCH, M.D.....	Assistant in Gynecology

Third Year. DIADACTIC WORK. A course of thirty lectures and recitations.

Fourth Year. CLINICAL WORK. Six hours weekly for one trimester. In this course the student writes the clinical history of each patient in the ward, makes a general physical examination, including the blood and urine, before the patient is brought before the class. A pelvic examination is made by six students, and any operation required is then done before a section of the class small enough to see clearly what is being done and how it is done. On a subsequent day the whole group examines, microscopically, sections prepared from material removed from patients that have been before them.

DEPARTMENT OF OPHTHALMOLOGY

CLYDE A. CLAPP, M.D.....	Professor of Ophthalmology
M. RANDOLPH KAHN, M.D.....	Clinical Professor of Ophthalmology
H. K. FLECK, M.D.....	Associate Professor of Ophthalmology
R. D. WEST, M.D.....	Associate in Ophthalmology
JONAS FRIEDENWALD, A.B., M.D.....	Lecturer in Ophthalmic Pathology
JOSEPH I. KEMLER, M.D.....	Associate in Ophthalmology
A. LLOYD MACLEAN, M.D.....	Instructor in Ophthalmology
CHARLES CAHN, M.D.....	Instructor in Ophthalmology
F. A. HOLDEN, M.D.....	Instructor in Ophthalmology
M. L. SMALL, M.D.....	Instructor in Ophthalmology
HENRY F. GRAFF, A.B., M.D.....	Instructor in Ophthalmology
JOHN G. RUNKLE, M.D.....	Assistant in Ophthalmology

Third Year. Second semester, Course in Diseases of the Eye by M. Randolph Kahn, consisting of lectures and demonstrations upon the commoner diseases of the eye and its appendages with demonstration of refractive errors. Section work weekly demonstrating the use of the ophthalmoscope upon both the artificial eye and patients.

Fourth Year. CLINICS AND DEMONSTRATIONS IN DISEASES OF THE EYE, weekly, for one year. Dr. Clapp.

Course consists of demonstrations of both patients and lantern slides of the more common diseases of the eye and their relationship to general disease.

Weekly ward classes at the University and the Baltimore Eye, Ear and Throat Hospital, City Hospitals during which the eye grounds of the various medical and surgical conditions are demonstrated, by Drs. Fleck, West, Kemler and Graff.

Also daily demonstrations in the taking of histories, the diagnosis and treatment of the various conditions as seen in the dispensary.

Third Year

Lectures	20 hours
Laboratory	10 hours

Total	30 hours
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Fourth Year

Lectures and demonstrations.....	26 hours
Clinical work	20 hours

Total	56 hours
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HISTORY OF MEDICINE

JOHN RATHBONE OLIVER, A.B., M.D., Ph.D.

Professor of the History of Medicine

During the past Academic year the lectures were devoted to Modern Medicine. Ten lectures were given. Five of these gave a general outline of the development of Modern Medicine, while the remaining five were devoted to outstanding personalities in the same period of medical history. A special emphasis was laid on America's contribution to medicine in connection with the lives of men like Beaumont, Walter Read, Trudeau and Osler. The lectures were illustrated with a large number of lantern slides especially selected by Col. Fielding Garrison, then of the General Surgeon's Library, and prepared by the official's photographer in Washington. During the past four years this course of lectures has covered in a general way the entire field of medical history so that any medical student who has attended the lectures during his four years' course has been given at least an outline of the history of his profession.

Beginning with the lectures of 1931-32 the four years' cycle will be repeated with a general introduction followed by lectures on Primitive Medicine; the Medicine of Egypt, of Assyrio-Babylonia, of India, of Greece and of Rome.

FIRST YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 28, 1931, TO JANUARY 30, 1932

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00— 11.00		Laboratory Biological Chemistry Section A	Laboratory Biological Chemistry Section B	Laboratory Biological Chemistry Section A	Laboratory Biological Chemistry Section B	
11.00— 12.00	Biological Chemistry C. H.					
12.00 to 1.00	Lunch	Lunch	Lunch	Lunch	Lunch	
1.00 to 2.00	Biological Chemistry C. H.	Biological Chemistry C. H.	Biological Chemistry 29 S. Greene Street	Biological Chemistry C. H.	Biological Chemistry C. H.	
2.00 to 5.00	Laboratory Histology and Embryology	Laboratory Histology and Embryology		Laboratory Histology and Embryology	Laboratory Histology and Embryology	

SECOND SEMESTER, FEBRUARY 1 TO MAY 28, 1932

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	Laboratory *Anatomy	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy
12.00 to 1.00	Lunch	Lunch	Lunch	Lunch	Lunch	
1.00 to 2.00	Anatomy 29 S. Greene Street & A. H.	Anatomy C. H. & A. H.	Anatomy C. H. & A. H.	Anatomy C. H. & A. H.	Anatomy C. H. & A. H.	
2.00 to 5.00	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	Laboratory Anatomy	

* Anatomy includes both Gross and Neural Anatomy.

LOCATIONS OF LECTURE HALLS AND LABORATORIES:

A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
 C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.
 Anatomy Laboratory—Third Floor, Gray Laboratory, Lombard and Greene Streets.
 Biological Chemistry Laboratory—Third Floor, 31 S. Greene Street.
 Histology and Embryology Laboratory—32-34 S. Paca Street Sixth Floor.
 Neural Anatomy Laboratory, 32-34 S. Paca Street, Sixth Floor.

Mid-Year Examinations—January 25 to January 30, 1932.

Final Examinations—May 23 to May 28, 1932.

SECOND YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 28, 1931, TO JANUARY 30, 1932

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 9.00 to 10.00	Physiology A. H.	Physiology A. H.	Physiology A. H.	Laboratory	Laboratory	
10.00 to 11.00	Pharmacology A. H.	Pharmacology A. H.	Pharmacology A. H.	Physiology	Physiology	Physiology A. H.
11.00 to 12.00	Pathology A. H.	Pathology A. H.	Bacteriology A. H.	Section A	Section B	Surgical Anatomy C. H.
12.00 to 12.30 P. M.	Lunch	Lunch	(12-1 P. M.) Lunch	Lunch	Lunch	
12.30 to 2.30	Laboratory Bacteriology	Laboratory Bacteriology	(1-2 P. M.) Medicine C. H.	Laboratory Bacteriology	Laboratory Bacteriology	
2.30 to 3.30	Laboratory Physiology Section A	Laboratory Physiology Section B	(2-4 P. M.) Physical Diagnosis Univ. Hosp. Disp.	Surgical Anatomy C. H.	Laboratory	
3.30 to 5.30	Pharmacology Section B	Pharmacology Section A		Laboratory Surgical Anatomy	Surgical Anatomy	

SECOND YEAR SCHEDULE

SECOND SEMESTER, FEBRUARY 1, TO MAY 28, 1932

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 9.30	Surgery A. H.	Surgery A. H.	*Physiology A. H.	Laboratory	Laboratory	
9.30 to 10.30	Pharmacology A. H.	Pharmacology A. H.	Pharmacology A. H.			
10.30 to 11.30	Pathology A. H.	Pathology A. H.	Immunology A. H.			
11.30 to 12.00	Lunch	Lunch	Lunch	Lunch	Lunch	(11-12) Physiology C. H.
P. M. 12.00 to 2.00	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	(12-1) Medical Clinic Amp.
2.00 to 3.00	Physiology C. H.	Laboratory Immunology	Laboratory Immunology	Laboratory	Laboratory	
3.00 to 4.00	Physiology C. H.			Physiology Section B	Physiology Section A	
4.00 to 5.00				Pharmacology Section A	Pharmacology Section B	

LOCATIONS OF LECTURE HALLS AND LABORATORIES:

A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.

Laboratories:

Bacteriology—Second Floor, 31 S. Greene Street.
Immunology—Second Floor, 31 S. Greene Street.
Pathology—Second Floor, 31 S. Greene Street.
Pharmacology—Second Floor, Gray Laboratory, Lombard and Greene Streets.
Physiology—First Floor, Gray Laboratory, Lombard and Greene Streets.
Surgical Anatomy—Third Floor, Gray Laboratory, Lombard and Greene Streets.
Amp.—Amphitheatre, University Hospital, Lombard and Greene Streets.
Univ. Hospital, Disp.—Dispensary, University Hospital, Lombard and Greene Streets.
* Physiology Course Terminates March 31, 1932.

Mid-Year Examinations—January 25 to January 30, 1932.
Final Examinations—May 23 to May 28, 1932.

THIRD YEAR SCHEDULE

SESSION 1931-32

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	Therapeutics C. H.	Pathology C. H.	Medicine C. H.	Medicine C. H.	Pathology C. H.	Medicine C. H.
9.30 to 10.30	Obstetrics C. H.	Surgery C. H.	Obstetrics C. H.	Surgery C. H.	Medicine C. H.	Surgery C. H.
10.30 to 1.00	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch
1.00 to 2.00	Surgical Clinic Amp. **Nose-Throat C. H.	Medical Clinic Amp.	Neurology P. & S. 34	(12.45-1.45) Gynecology 29 S. Greene	Obstetrics A. H.	Transfer
2.15 to 3.15	Pathology Laboratory	Pathology Laboratory	(2.30-4.30) Section A Clinical Medicine Surgery Gross Pathology at Baltimore City Hospitals	(2-3) Clinical Pathology 29 S. Greene	Clinical Pathology Laboratory	(2-4) Section B Clinical Medicine Surgery Gross Pathology at Baltimore City Hospitals
3.15 to 4.15				*(3-4) Eye and Ear 29 S. Greene		
4.15 to 5.15	Preventive Medicine A. H.	Pediatrics C. H.	(2.15-4.15) Section B Group Work Ophthalmos- copy Practical Obstetrics Univ. Hosp.	Preventive Medicine Legal Medicine Mental Hygiene 29 S. Greene		

From 10.30 A. M. to 1.00 P. M. the class is divided into two sections, one section reporting at Calvert and Saratoga Streets, the other at Lombard and Greene Streets.
 C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.
 A. H.—Anatomical Hall—N. E. Cor. Lombard and Greene Streets.
 Amp.—Amphitheatre—University Hospital, S. W. Cor. Lombard and Greene Streets.
 P. & S.—N. W. Cor. Calvert and Saratoga Streets. Rooms indicated on Second Floor.

At the beginning of the second semester Section "A" at Baltimore City Hospital on Saturdays, 2-4 P. M., and University Hospital on Wednesdays, 2.15-4.15 P. M.; Section "B" at Baltimore City Hospital on Wednesdays, 2.30-4.30 P. M.

Mid-Year Examinations—Jan. 25 to Jan. 30, 1932

Final Examinations—May 16 to May 28, 1932

*Ear—First semester.

*Eye—Second semester.

**Nose-Throat—Second semester.

FOURTH YEAR SCHEDULE

SESSION 1931-32

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M.	Ward Classes	Ward Classes	Ward Classes	Ward Classes	Ward Classes	Ward Classes
9.00 to 11.00	Medicine Surgery Obstetrics	Medicine Surgery Gynecology	Medicine Surgery Obstetrics	Medicine Surgery Gynecology	Medicine Surgery Obstetrics	Medicine Surgery Gynecology
11.00 to 12.00	Orthopaedic Surgery Univ. Sec. Amp. P. & S. Sec. 51	Medical Clinic Univ. Sec. Amp. Surgical Pathology P. & S. Sec. 40	Clinical Pathological Conference Univ. Sec. C. H. P. & S. Sec. 34	Surgical Clinic Univ. Sec. Amp. P. & S. Sec. 51	Medical Clinic Univ. Sec. Amp. P. & S. Sec. 34	Pediatrics Clinic Univ. Sec. Amp. P. & S. 34
P. M. 12.00 to 2.00	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary
2.15 to 3.15	Dermatology Clinic (Full Class at Univ. Hosp.) Amp.	Neurology Clinic Univ. Sec. Amp. P. & S. Sec. 34	Eye and Ear Clinic (Full Class at Univ. Hosp.) Amp.	Obstetrical Clinic (Full Class at Univ. Hosp.) Amp.	Gastro-Enterology Clinic (Full Class at Univ. Hosp.) Amp.	Genito-Urinary Clinic P. & S. Sec. 51
3.30 to 5.00	P. & S. Sec. Ward Classes Medicine Urology Eye and Ear	Ward Classes Therapeutics Proctology Radiotherapy	P. & S. Sec. Ward Classes Medicine Roentgenology Preventive Medicine	Ward Classes Medicine Nose & Throat Physical Therapeutics	Ward Classes Neurology Psychiatry U. H. Orthopaedic Surgery Kernan Hospital	
3.30 to 5.00	Univ. Sec. Ward Classes Medicine Urology		Univ. Sec. Ward Classes Medicine Roentgenology Eye and Ear	(5 to 6 P. M.) March, April and May History of Medicine C. H.		

The Senior Class is divided into two sections, which report, one at Lombard and Greene Streets, the other at Calvert and Saratoga Streets, for one semester each, then rotate.

Each section of the class is divided into three groups—Medical, Surgical, and Special. These groups will rotate on the following dates:

FIRST SEMESTER

1st period Sept. 28-Oct. 31

2nd period Nov. 2-Dec. 5

3rd period Dec. 7-Jan. 23

C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.

Amp.—Amphitheatre—University Hospital.

P. & S., 34—Second Floor, Calvert and Saratoga Streets.

P. & S., 40, 51—Fourth Floor, Calvert and Saratoga Streets.

Final Examinations—May 16 to May 21, 1932

For sub-sections of P. & S. ward classes, 3.30 to 5.00 P. M., see supplementary schedule at Mercy Hospital. For sub-sections of U. H. ward classes, 3.30 to 5.00 P. M., see Medical School bulletin board.

SECOND SEMESTER

1st period Jan. 25-Feb. 27

2nd period Feb. 29-Apr. 9

3rd period Apr. 11-May 14

REQUIREMENTS FOR MATRICULATION

Admission to the course in medicine is by a completed Medical Student Certificate issued by the Registrar of the University of Maryland. This certificate is obtained from the Registrar on the basis of satisfactory educational credentials, and is essential for admission to any class.

The minimum requirements for the issuance of the Medical Student Certificate are:

(a) The completion of a standard four-year secondary school course, or the equivalent in entrance examinations, and at least

(b) Two years or sixty semester hours of college credits (exclusive of military science and physical education), including chemistry, physics, biology, English, and a modern foreign language. (See below for details.)

Women are admitted to the School of Medicine of this University.

(A) SECONDARY SCHOOL REQUIREMENTS

Graduation from an accredited secondary school, after pursuing a four-year course (based upon an approved elementary school course), or the equivalent as demonstrated by entrance examinations.

Total entrance units required, 15; prescribed, 9; elective, 6.

Prescribed (9 units); English (I, II, III, IV), 3 units; algebra to quadratics, 1 unit; plane geometry, 1 unit; foreign language, 2 units of one language; history, 1 unit; and science, 1 unit.

Elective (6 units), of which not more than 4 units in vocational subjects, (agriculture, commercial, home economics, shop, and drawing) will be accepted: Agriculture, astronomy, biology, botany, chemistry, civics, commercial, drawing, economics, general science, geology, history, home economics, languages, mathematics, physical geography, physics, zoology, or any other subject offered in a standard secondary school for which graduation credit is granted toward college or university entrance.

(B) DETAILS OF THE COLLEGE REQUIREMENT

a. The preliminary college course shall extend through two college sessions of at least thirty-two weeks each of actual instruction, including final examinations.

b. In excellence of teaching and in content, the work of this preliminary college course shall be equal to the work done in the freshman and sophomore years in standard colleges and universities.

c. This preliminary college course shall include courses in chemistry, physics, biology, English, and a modern foreign language, each course to embrace at least the credit shown in the schedule following:

**SCHEDULE OF SUBJECTS OF THE TWO-YEAR
PREMEDICAL COLLEGE COURSE**

Sixty Semester Hours Required

REQUIRED COURSES:	<i>Semester Hours</i>
Chemistry (a)	12
Physics (b)	8
Biology (c)	8
English Composition and Literature (d)	6
Modern Foreign Language (e)	6

COURSES STRONGLY URGED:

Additional English.

Additional Foreign Language.

Comparative Vertebrate Anatomy.

Quantitative Analysis or other Advanced Chemistry.

Advanced Algebra and Trigonometry.

Psychology, Logic, Social Science, Economics, History, Political Science.

A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be of not less than fifty minutes' duration net, at least, two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

(a) **CHEMISTRY.** Twelve semester hours required of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work, and four semester hours in organic chemistry, including two semester hours of laboratory work. In the interpretation of this rule, work in qualitative analysis may be counted as general inorganic chemistry.

(b) **PHYSICS.** Eight semester hours required, of which at least two must be laboratory work. This course presupposes a knowledge of plane trigonometry.

(c) **BIOLOGY.** Eight semester hours required, of which four must be laboratory work. This requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone.

(d) **ENGLISH COMPOSITION AND LITERATURE.** The usual introductory college course of six semester hours, or its equivalent, is required.

(e) **FOREIGN LANGUAGE.** Six semester hours minimum requirement. A reading knowledge of a modern foreign language is very strongly urged. French and German have the closest bearing upon modern medical literature.

COMBINED COURSE IN ARTS AND SCIENCES, AND MEDICINE

A combined seven years' curriculum is offered leading to the degrees of Bachelor of Arts or Bachelor of Science and Doctor of Medicine. The first three years are taken in residence in the College of Arts and Sciences at College Park, and the last four years in the School of Medicine in Baltimore. (See University catalogue for details of quantitative and qualitative premedical course requirements.)

Upon the successful completion of the first year in the School of Medicine, and upon the recommendation of the Dean, the degree of Bachelor of Arts, or Bachelor of Science may be conferred by the College of Arts and Sciences.

Students are urged to consider carefully the advantages this combination course offers over the minimum requirements of the two years. By completing three years the training may be gradually broadened by a wider latitude in the election of courses in the arts subjects.

POST-GRADUATE STUDENTS

Graduates in medicine desiring to take the work of the senior year without being candidates for the degree, and, therefore, without examination, may receive a certificate of attendance on completing the full course satisfactorily.

The requirements for graduates in medicine admitted to the fourth-year class as candidates for the degree of Doctor of Medicine are the same as those enforced against undergraduates admitted to advanced standing.

Summer Post-Graduate Courses—In a later number of the Bulletin detailed announcement will be made of the Post-Graduate Summer Courses.

RULES

1. All students are required to take the spring examinations unless excused by the Dean. No student will be permitted to advance from a lower to a higher class with conditions.

2. Should a student be required to repeat any year in the course, he must pay regular fees.

3. A student failing in final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and to take examination in such other branches as may be required should he again be permitted to enter the school as a candidate for graduation.

4. The general fitness of a candidate for graduation will be taken into consideration by the Faculty as well as the results of his examination.

5. All students entering the School of Medicine of the University of Maryland are required to provide themselves with microscopes of a satisfactory type.

A standard microscope of either Bausch & Lomb, Leitz, Spencer Lens or Zeiss make, fitted with the following attachments, will fill the requirements:

Triple nose piece	10 x and 5 x Oculars
Wide aperture stage	16mm. and 4mm. Objectives
Quick Screw condenser (Abbe)	1.9mm. 125 N.A. Oil Immersion Lens

STUDENTS MUST BE PREPARED TO PURCHASE MICROSCOPES AT THE BEGINNING OF THE FIRST YEAR

All the above rules, as well as the fees stated below, relate to the year ending June 4th, 1932, only. The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the Faculty deems it expedient.

FEES

Matriculation fee (paid once).....	\$10.00
Tuition fee (each year) for residents of Maryland.....	350.00
Tuition fee (each year) for non-residents.....	500.00
Laboratory fee (each year).....	25.00
Special and re-examination fee.....	5.00
Graduation fee	15.00

No fees are returnable.

The above fees apply to all students who matriculate in the School of Medicine in any class for the session beginning September 28, 1931.

All students, after proper certification, are required to register at the Office of the Registrar. (See calendar in front part of

this bulletin for dates for the payments of fees, and the note regarding late registration fee.)

The matriculation fee is payable at the time the applicant is offered acceptance as a student.

The laboratory fee and one-half of the tuition fee for the year shall be paid at the time of the first semester registration, and one-half of the tuition fee shall be paid at the second semester registration date.

Failure to meet these conditions will automatically debar the student from attendance on classes and other privileges of the University.

When offering checks in payment of tuition and other fees, students are requested to have them drawn in the exact amount of such fees. Personal checks whose face value is in excess of the fees due will be accepted for collection.

DEFINITION OF RESIDENCE AND NON-RESIDENCE*

Students who are minors are considered to be resident students if, at the time of their registration, their parents* have been residents of this State for at least one year.

Adult students are considered to be resident students if, at the time of their registration, they have been residents of this State for a least one year.

The status of the residence of a student is determined at the time of his first registration in the University and may not thereafter be changed by him unless, in the case of a minor, his parents* move to and become legal residents of this State by maintaining such residence for at least one full calendar year. However, the right of the student (minor) to change from a non-resident to a resident status must be established by him prior to registration for a semester in any academic year.

* The term "parents" includes persons who, by reason of death or other unusual circumstances, have been legally constituted the guardians of or stand in *loco parentis* to such minor students.

STATE MEDICAL STUDENT QUALIFYING CERTIFICATES

Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York, and who are accepted as students by the University of Maryland, must apply immediately thereafter to their respective state board of education for a medical student qualifying certificate (Pennsylvania and New Jersey), or an approval of application for a medical student qualifying certificate (New York).

These certificates are to be on file in the Office of the Registrar, University of Maryland, during the period of attendance in the School of Medicine.

MEDICAL CARE OF STUDENTS

Beginning with the year 1930-31, the Medical Council has made provision for the systematic care of students in the Medical School, according to the following plan:

1. *Preliminary Examination*—All new students will be examined during the first week of the semester. Notice of the date, time, and place of the examination will be announced to the classes and on the bulletin board. The passing of this physical examination is necessary before final acceptance of any student.

2. *Medical Attention*—Students in need of medical attention will be seen by the School Physician, Dr. T. N. Carey, in his office at the Medical School, between 4 and 5 P. M., daily, except Saturday and Sunday. In cases of necessity, students will be seen at their homes.

3. *Hospitalization*—If it becomes necessary for any student to enter the hospital during the school year, the Medical Council has arranged for the payment of part or all of his hospital expenses, depending on the length of his stay and special expenses incurred. This applies only to students admitted through the School Physician's Office.

4. Prospective students are advised to have any known physical defects corrected before entering school in order to prevent loss of time which later correction might incur. As minor visual defects are frequently unrecognized until detected by an ophthalmologist, it is especially urged that all new students have their eyes examined and any error of refraction corrected before beginning the course.

PRIZES AND SCHOLARSHIPS***FACULTY PRIZE**

To stimulate study among the candidates for graduation, the Faculty offers a Gold Medal to the candidate who secures the highest average during the four years of his course. Certificates of Honor are awarded to the five candidates standing next highest.

DR. A. BRADLEY GAITHER MEMORIAL PRIZE

A prize of \$25.00 is given each year by Mrs. A. Bradley Gaither as a memorial to the late Dr. A. Bradley Gaither, to the student in the senior class doing the best work in Genito-Urinary Surgery.

SCHOLARSHIPS**The Dr. Samuel Leon Frank Scholarship**

(Value \$125.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this University.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Medical Council "to a medical student of the University of Maryland, who in the judgment of said Faculty, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student who has successfully completed one year's work in this school. No student may hold such scholarship for more than two years.

* Note: Scholarships, unless specifically renewed on consideration of application, are for one year only.

The Charles M. Hitchcock Scholarships

(Value \$125.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the University.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University upon nomination by the Medical Council to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Faculty satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

The Randolph Winslow Scholarship

(Value \$125.00)

This scholarship was established by Prof. Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Medical Council, to a "needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Medical Council that he is worthy of and in need of assistance."

The Dr. Leo Karlinsky Scholarship

(Value \$200.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of this University.

The scholarship is awarded to a second-year student who at the end of the first year passes the best examination in Anatomy, Histology, Embryology, and Biological Chemistry.

The University Scholarships

Two scholarships are awarded by the University: One to a student of the College of Arts and Sciences appointed by the President, to be held for only one year; the other, which entitles the holder to exemption from payment of the tuition fee of the year, is awarded annually by the Medical Council to a student of the Senior Class who presents to the Medical Council satisfactory evidence that he is of good moral character and is worthy of and in need of assistance to complete the course.

Frederica Gehrmann Scholarship

This scholarship was established by the bequest of the late Mrs. Frederica Gehrmann and entitles the holder to exemption from payment of tuition fees. The scholarship is awarded to a third-year student who at the end of the second year passes the best practical examination in Anatomy, Physiology, Biological Chemistry, Pharmacology, Pathology, Immunology and Serology.

The Clarence and Geneva Warfield Scholarships

(Value, \$300.00 each)

There are five scholarships established by the Regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships will be available to students of any of the classes of the course in medicine. Preference is given to students from the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must agree, after graduation and a year's internship, to undertake the practice of medicine, for a term of two years, in the county to which the student is accredited or in a county selected by the Council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Council, the money advanced by the Regents shall be refunded.

Israel and Cecelia E. Cohen Scholarships

(Value \$250.00)

This scholarship was established by Miss Eleanor S. Cohen in memory of her parents, Israel and Cecelia E. Cohen. Terms and conditions: This scholarship will be available to students of any one of the classes of the course in Medicine; preference is given to students of the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the Council.

Daughters of Harmony Scholarship

(Value \$100.00)

This scholarship is given each year by the Daughters of Harmony as part payment of the tuition of a needy student of good character. He must be a member of the senior class and a bona fide resident of Baltimore. He must be nominated by the Medical Council.

ANNUAL HOSPITAL APPOINTMENTS

On February 1st of each session the following annual appointments are made from among the graduates of the school:

TO THE UNIVERSITY HOSPITAL

Two Resident Surgeons
Two Resident Physicians
One Resident Gynecologist

Two Resident Obstetricians
Thirteen Junior Residents on a Rotating Service

A number of students are appointed each year, at the close of the session, as Clinical Assistants in the University Hospital for the summer months.

TO THE MERCY HOSPITAL

Chief Resident Physician
One Assistant Resident Physician
Chief Resident Surgeon
Five Assistant Resident Surgeons

One Resident Gynecologist
One Resident Obstetrician
Eight Junior Residents on a Rotating Service

NOTICE TO STUDENTS

The personal expenses of the students are at least as low in Baltimore as in any large city in the United States. The following estimates of a student's personal expenses for the academic year of eight months have been prepared by students, and are based upon actual experience. *In addition to these the student must bear in mind the expenditure for a microscope.*

<i>Items</i>	<i>Low</i>	<i>Average</i>	<i>Liberal</i>
Books	\$50	\$75	\$100
College Incidentals	20	20	20
Board, eight months.....	200	250	275
Room rent	64	80	100
Clothing and laundry.....	50	80	150
All other expenses.....	25	50	75
	<hr/>	<hr/>	<hr/>
Total.....	\$409	\$556	\$720

Students will save time and expense upon their arrival in the city by going direct to the School of Medicine on the University grounds, N. E. Corner Lombard and Greene Streets. Here may be found a list of comfortable and convenient boarding houses suitable to their means and wishes.

For further information, apply to

J. M. H. ROWLAND, M.D., *Dean*,
Lombard and Greene Streets

**GRADUATES, UNIVERSITY OF MARYLAND SCHOOL OF
MEDICINE AND COLLEGE OF PHYSICIANS
AND SURGEONS, JUNE 7, 1930**

Aronofsky, Milton Robert, Ph.B., Connecticut	Harsha, Gene Melford, B.S., West Virginia
Ashman, Harry, B.S.,.....New York	Helms, John Chapman, B.S.,.....Virginia
Baumgardner, George Martin, A.B., Maryland	Hildenbrand, Emil John Christo- pher, B.S.,.....Maryland
Baylus, Meyer Milby, Ph.G., Maryland	Hill, George Delmas, B.S., West Virginia
Belinkin, William, B.S.,.....New York	Hornbaker, John Harlan, A.B., Maryland
Benfer, Kenneth Louis, A.B., Maryland	Hudson, Rollin Carl, A.B.,.....Maryland
Berkowitz, Rudolph, A.B., New York	Jackson, Marshall Vaden, North Carolina
Berry, Erwin Phifer, North Carolina	Johnson, Marius Pitkin, A.B., Connecticut
Blum, Joseph Sidney, Ph.G., Maryland	Keller, Frederick Doyle, B.S., West Virginia
Bonner, Merle Dumont, North Carolina	Kleinman, Abraham Morris, B.S., New York
Brown, Eugene Scott, B.S., West Virginia	Kovarsky, Albert Elias, A.B., New Jersey
Burns, John Howard, Jr., A.B., Maryland	Kraemer, Samuel Harry, B.S., New Jersey
Chance, Lester Thomas, B.S., North Carolina	Kremen, Abraham, A.B.,.....Maryland
Chenitz, William, B.S.,.....New Jersey	Kuhn, Esther Frances, A.B., Maryland
Cohen, Archie Robert, Ph.G., Maryland	Levin, Morton Loeb, Ph.G.,.....Maryland
Cohen, Irvin Joseph, Ph. G., Maryland	Lewis, Frank Russell,.....Maryland
Cohen, Max Hurston, Ph.G., Maryland	Mace, Vernie Emmett, B.S., West Virginia
Coppola, Matthew Joseph, B.S., New York	Magovern, Thomas Francis, New Jersey
Durrett, Clay Earl, B.S.,.....Maryland	Mansdorfer, George Bowers, B.S., Maryland
Dyar, Edna Gerrish, Ph.D., District of Columbia	Miller, Benjamin Herman, A.B., Maryland
Farinacci, Charles Joseph, A.B.,.....Ohio	Miller, Isaac,.....New Jersey
Faw, Wylie Melvin, Jr.,.....Maryland	Miller, James Alton, A.B., Maryland
Feman, Jacob George, A.B.,.....New York	Montilla, Victor Jose,.....Porto Rico
Fiocco, Vincent James, B.S.,.....New York	Mortimer, Egbert Laird, Jr., A.B., Maryland
Fisher, Samuel,.....New Jersey	Moser, Charles Yarnelle, B.S., West Virginia
Ford, John Leonard, B.S., Pennsylvania	Needle, Nathan E.,.....Maryland
Forrest, Daniel Efland, B.S., North Carolina	Oliver, Robert Deleon, B.S., North Carolina
Garey, James Lyman, B.S., Pennsylvania	Oppenheim, Joseph Harry, New York
Garfinkel, Abraham, B.S.,.....New York	Owen, Duncan Shaw,.....North Carolina
Gerner, Harry Ezekiel, B.S., New Jersey	Owens, Zack Doxey, B.S., North Carolina
Gersten, Paul Francis,.....New York	Perlman, Robert, B.S.,.....New York
Ginsberg, Leon, Ph.D.,.....New York	Reid, Francis Fielding, A.B., Maryland
Goldman, Lester Milton, B.S., New Jersey	Rineberg, Irving Edward, B.S., New Jersey
Goldstein, Jacob Everett, B.S., New York	
Goodman, Julius Henry, Ph. G., Maryland	
Hamer, William Alexander, B.S., North Carolina	
Harrell, Leon Jackson, B.S., North Carolina	

Romano, Nicholas Michael,	Pennsylvania	Sperling, Nathaniel Mortimer, B.S.,	New York
Rosenthal, Abner Herman, B.S.,	New York	Strickland, Horace Gilmore, B.S.,	North Carolina
Shill, Benjamin, A.B.	New Jersey	Thompson, Carl Truman, B.S., A.B.,	West Virginia
Shulman, Louis Robert	Maryland	Warman, Wilton Merle, A.B., B.S.,	West Virginia
Smith, Joseph Jacob, A.B., Connecticut		Weinstein, Jack, B.S.	New York
Snoops, George John, Jr., A.B.,	Maryland	Werner, Aaron Seth	New York
Snyder, Nathan, Ph.G.	Maryland	Woolley, Alice Stone, B.S.	New York
Soltroff, Jack Gerson, B.S.,	Pennsylvania	Young, Ralph Funk	Maryland
		Zeiger, Samuel, B.S.	New York

Honors

University Prize Gold Medal.....Morton Loeb Levin

Certificates of Honor

Lester Milton Goldman	John Harlan Hornbaker
Max Hurston Cohen	Marius Pitkin Johnson
Abner Herman Rosenthal	

Prizes

The Dr. Jose L. Hirsch memorial prize of \$50.00 for the best work in Pathology during the second and third years.....Harry Ezekiel Gerner

The Dr. Leo Karlinsky memorial scholarship for the highest standing in the Freshman Class.....Meyer Leo Goldman

The Dr. A. Bradley Gaither memorial prize of \$25.00 for the best work in Genito-Urinary Surgery during the senior year.....Joseph S. Blum

**MATRICULATES, UNIVERSITY OF MARYLAND SCHOOL OF
MEDICINE AND COLLEGE OF PHYSICIANS
AND SURGEONS, 1930-1931**

FOURTH YEAR CLASS

Adalman, Philip, Ph.G.....	Maryland	Hornbrook, Kent Maidlow,	
Allen, Howard Stanley.....	Pennsylvania		West Virginia
Andrew, David Holmes, A.B.,		Jacobson, Samuel Maurice, Ph.G.,	
	Maryland		Maryland
Arnett, Thomas Morrison, A.B., B.S.,		Jaklitsch, Frank Henry, B.S.,	
	West Virginia		New York
Bamberger, Beatrice, A.B.....	Maryland	Jensen, Carl Dana Fausbol,	
Barton, Paul Canfield, B.S.....	Ohio		Washington
Baumgartner, Eugene Irving, A.B.,		Jett, Page Covington, A.B.....	Maryland
	Maryland	Jones, Arthur Ford.....	Maryland
Berman, Henry Irving.....	Maryland	Karger, Abraham, B.S.....	New York
Boggs, William Carroll, A.B., B.S.,		Kaufman, Max, Ph.G.....	New York
	West Virginia	Keefe, Walter Joseph, A.B.,	
Brice, Arthur Talbott.....	Maryland		Connecticut
Brill, Bernard, B.S.....	New York	Kermisch, Albert, Ph.G., B.S.,	
Brill, John Leonard, A.B.,			Maryland
	Pennsylvania	Kilgus, John Frank, Jr.....	Pennsylvania
Cashwell, Roy Lee, B.S.,		Kohn, Walter.....	Maryland
	North Carolina	Krieger, Jerome Leon, A.B.....	Maryland
Cloninger, Kenneth Lee, B.S.		Krosnoff, Michael, B.S.....	Pennsylvania
	North Carolina	Lachman, Harry, B.S.....	Maryland
Contract, Eli, A.B.....	Maryland	Langeluttig, Harry Vernon, A.B.,	
Davis, Melvin Booth, B.S.....	Maryland		Maryland
Dawson, William Maddren, B.S.,		Lanham, Alston Gordon, B.S.,	
	New York		West Virginia
Donohue, Bernard Walker, A.B.,		Lerner, Philip Frank, A.B.....	Maryland
	Maryland	Leshine, Sidney Starr, B.S.,	
Drenga, Joseph Francis, A.B.,			Connecticut
	Maryland	Levine, David Robert, B.S.....	New York
Eckstein, Harry, M.A.....	New York	Lubin, Paul.....	Maryland
Edel, John Wesley, Jr., B.S.,	Maryland	Mahan, Edgar Wade, B.S.,	
Eisenberg, David Solomon, B.S.,			Pennsylvania
	New York	Mankovich, Desiderius George,	
Ernest, Roy Cooper, A.B.....	Ohio		Pennsylvania
Feldman, Samuel, A.M.....	Maryland	Martin, Thomas Adrian, Ph.G.,	
Feuer, Arthur, B.S.....	New York		Maryland
Foster, Ruth.....	Massachusetts	Masterson, John Francis.....	New Jersey
Friedman, Joseph, B.S.....	New York	Meyer, Leo Martin, M.A.....	New York
Grossman, Isadore Karl, A.B.,		Morrison, Clarence Fisher, B.S.,	
	Maryland		West Virginia
Grove, Donald Birtner.....	Maryland	Moyers, Waldo Briggs, A.B.,	
Gundry, Rachel Krebs, A.B.,	Maryland		West Virginia
Hannum, Marvin Ray, B.S.,		Murphy, Richard Lawrence, A.B.,	
	West Virginia		New Hampshire
Harris, Joseph William.....	Utah	Nocera, Francisco Paolo.....	Porto Rico
Helfrich, Raymond Frederick, A.B.,		Palitz, Leo Solomon, M.A.....	New York
	Maryland	Rehmeyer, Walter Owen, B.S.,	
Hoffman, Reuben, A.B.....	Maryland		Pennsylvania
Hollander, Mark Buckner, A.B.,		Rhoads, John Peter.....	Pennsylvania
	Maryland	Rodriguez, Manuel, B.S.....	Porto Rico

FOURTH YEAR CLASS—Continued

Rohm, Robert Franklin.....	Pennsylvania	Skovron, Michael J., B.S.,	Pennsylvania
Rosenberg, Benjamin, B.S.....	New York	Slate, Marvin Longworth, A.B.,	North Carolina
Rozum, John Charles.....	New York	Slavcoff, Alexander, B.S.,	Pennsylvania
Seabold, William Merven, A.B.,	Maryland	Smith, Solomon, A.B.....	Maryland
Schimunek, Emmanuel Aloysius, A.B.,	Maryland	Sprecher, Milford Harsh, B.S.,	Maryland
Seidman, Herman Harold, B.S.,	New York	Sterling, Susanne.....	Maryland
Shaw, Christopher Campbell, Ph.B.,	Maryland	Stevens, Russell Alvin, A.B.,	Pennsylvania
Shelley, Harry Sandberg, B.S.,	Maryland	Taylor, Robert Bruce.....	Pennsylvania
Shochat, Albert Joshua, B.S.,	New York	Van Ormer, William Alfred,	Pennsylvania
Siwinski, Arthur George, A.B.,	Maryland	Warren, Edward William.....	New York
		Whims, Harold Carter, B.S.,	North Carolina
		Wigderson, Henry, B.S.....	New York

THIRD YEAR CLASS

Abrashkin, Mortimer Dick, B.S.,	Connecticut	France, Andrew Menaris, B.S.,	Maryland
Ahroon, Carl Richard, A.B.,	Maryland	Ganz, Samuel Evans, M.A.,	New York
Ashman, Leon, B.S.....	Maryland	Geller, Samuel, B.S.....	New Jersey
Bell, Charles Raymond, B.S.,	Pennsylvania	Gershenson, David Abraham, A.B.,	Maryland
Bell, James Russell.....	Pennsylvania	Gittleman, Solomon Ellman, B.S.,	New York
Bercovitz, Nathan.....	New York	Glass, Albert Julius, Ph.G.,	Maryland
Berger, Herbert, B.S.....	New York	Gluckman, Albert Gerson, B.S.,	Delaware
Blum, Samuel Daniel, B.S.,	New York	Gorenberg, Harold, A.B.,	New Jersey
Bogorad, Daniel Emil.....	Maryland	Grosh, Joseph Walter, B.S.,	Pennsylvania
Brown, William Edward.....	California	Hall, Joseph Edwin, B.S.,	West Virginia
Byer, Jacob, M.A.....	New York	Halperin, David, B.S.....	New Jersey
Cannon, Martin.....	Ohio	Hammell, Frank Mull.....	New Jersey
Chimacoff, Hyman.....	New Jersey	Hantman, Irvin, Ph.G.....	Maryland
Clayman, David Stanford, Ph.G.,	Maryland	Harris, Jacob, A.B.....	New York
Crecca, Anthony Daniel, Ph.G.,	New Jersey	Hecht, Manes Schever, A.B.,	Maryland
Currie, Dwight McIver, A.B.,	North Carolina	Hendler, Hyman Bernard.....	Maryland
Davis, Carroll Kalman.....	New York	Hull, Harry Clay.....	Maryland
Demarco, Salvatore Joseph, A.B.,	Maryland	Jacobson, Meyer William, A.B.,	Maryland
Diamond, Joseph George, B.S.,	New Jersey	Kaplan, Abraham Nathan, M.S.,	New York
Dumler, John Charles, B.S.,	Maryland	Karfigin, Arthur, B.S.....	Maryland
Eichert, Herbert, Ph.G.....	Maryland	Katz, Abraham, B.S.....	New York
Eisenbrandt, William Henry, A.B.,	Maryland	Katz, Leonard.....	Maryland
Fein, Jack, B.S.....	New York	Katzenstein, Lawrence, B.S.,	Maryland
Fishbein, Elliot, M.S.....	New Jersey	Keiser, Sylvan.....	New York
Flom, Charles, Ph.G.....	Maryland		

THIRD YEAR CLASS—Continued

Kimmings, William Elias, B.S., West Virginia	Reckson, Morris Murray, New York
Klimes, Louis Frank.....Maryland	Roberts, Marion Butler, A.B., North Carolina
Korostoff, Bernard.....New York	Rohm, Jack Zeth.....Pennsylvania
Kress, Milton Bernard, B.S. in Ph., Maryland	Rosenthal, Stephen Isaiah, A.B., Pennsylvania
Krieger, Alexander Allan, Pennsylvania	Rubenstein, Robert, B.S., New Jersey
Lechner, Sidney Israel, M.A., New York	Sager, Harold, B.S.....New Jersey
Lefkowitz, Jacob, B.S.....New York	Sanchez, Robert Luis, A.B., Mexico
Legum, Samuel, A.B.....Maryland	Saunders, Thomas Sewell, Ph.G., Maryland
Lerner, George, M.A.....New York	Savage, John Edward, B.S., District of Columbia
Lieberman, Samuel, M.S.....New York	Schwartz, David Israel, B.S., in Ph., Maryland
Louft, Reuben Richard, A.B., Maryland	Shack, Max Herman.....New Jersey
Markman, Harry David, B.S., New York	Shaw, John Jacob, A.B.....New Jersey
McGovern, William Joseph, B.S., Pennsylvania	Siegel, Sidney Leon, B.S., New Jersey
McMillan, William Owen, West Virginia	Silverstein, George, A.B., Connecticut
Mebane, William Carter, North Carolina	Simmons, John Frederick, Maryland
Mickley, John Hoke, B.S., Pennsylvania	Snyder, Jerome, Ph.G.....Maryland
Miller, Myron Joseph, M.A., New York	Sollod, Aaron Charles, B.S. in Ph., Maryland
Moore, John Duer.....Maryland	Statman, Arthur James, B.S., New Jersey
Nachlas, Arthur, A.B.....Maryland	Stein, Charles, A.B.....Maryland
Newnam, Alpheus Carlton.....Maryland	Stephenson, Frank Richard, Maryland
Panebianco, Richard Robert, B.S., New York	Taylor, Francis Nicholson, A.B., Virginia
Pear, Henry Robert, District of Columbia	Thompson, Harry Goff.....Illinois
Philip, Arthur Jay, B.S.....New York	Tomlinson, Thomas H.....North Carolina
Pink, Solomon Harris, B.S., New Jersey	Whicker, Max Evans.....North Carolina
Prigal, Samuel Jeremiah, B.S., New York	Wilson, Frank, B.S., North Carolina
Proctor, Samuel Edward, A.B., Maryland	Wirts, Carl Alexander, B.S., Pennsylvania
Prussack, Solomon, M.S., New Jersey	Zupnik, Howard Lester, B.S., Pennsylvania
	Zuravin, Meyer Harry, B.S., New Jersey

SECOND YEAR CLASS

Aaron, Harold Henry, B.S.....New York	Comegys, Richard Williamson, A.B., Maryland
Baker, George Stansbury, M.A., Maryland	Diehl, Harold Clayton, B.S., Maryland
Beanstock, Sam, B.S.....New York	Di Stasio, Frank, B.S.....Connecticut
Becker, Martin, M.S.....New Jersey	Drucker, Victor, B.S.....New York
Bellin, David Elias, M.A., New York	Emanuel, Meyer, B.S.....New York
Bernstein, Joseph, Ph.G.....Maryland	Espinosa, Manuel.....Porto Rico
Blitzman, Louis, B.S.....New York	Etkind, Meyer George, B.S., Connecticut
Bowman, Harry Daniel.....Maryland	Fineman, Jerome, Ph.G.....Maryland
Cohen, Marvin Meyer, B.S., New Jersey	Franklin, Frank Anthony.....New Jersey
	Goldman, Abram, Ph.G.....Maryland

SECOND YEAR CLASS—Continued

Goldman, Alexander Blodnick, B.S., New York	Pico, Jose Teodoro, B.S.....Porto Rico
Goldman, Meyer Leo., A.B., New York	Racusin, Nathan, Ph.G.....Maryland
Gorrell, James Stanley, A.B., Maryland	Robinson, Daniel Robert, B.S., New York
Harris, Earle Harold.....New York	Rosenberg, Arthur, B.S.....New York
Hemminger, Earl Wentworth, B.S., Pennsylvania	Rosenfeld, David Herman, Ph.G., Maryland
Highstein, Gustav, Ph.G.....Maryland	Rubin, Samuel S., Ph.G.....Maryland
Himelfarb, Albert Joseph, A.B., Maryland	Rutland, Hedley Ethelbert, B.S., Pennsylvania
Hurwitz, George Hillel, A.B., Connecticut	Sasscer, James Ghiselin, B.S., Maryland
Hyman, Joseph, B.S.....New York	Schiff, Hyman, A.B.....Maryland
Hyman, Morris, A.B.....Connecticut	Schiff, Joseph, A.B.....Maryland
*Justice, James Thomas, Jr., A.B., North Carolina	Schindler, Blane Markwood, Ph.G., Maryland
Kenler, Myron Lewis, A.B., New York	Schlachman, Milton, Ph.G., Maryland
Keown, Lauriston Livingston, A.B., Maryland	Schneiman, Maurice Harris, A.B., Pennsylvania
Kimmel, Charles.....New Jersey	Schochet, George, Ph.G.....Maryland
Kline, Albert Adolph, B.S., Wisconsin	Schwartz, Alec Robert, B.S., Pennsylvania
Kochman, Leon Arthur.....Maryland	Schwartz, Paul M., Ph.G., Maryland
Konigsberg, Wilfred Kane, A.B., New Jersey	Shea, Cornelius Joseph.....Connecticut
Lentz, George Ellard, B.S., Pennsylvania	Smith, Ashby Wade.....North Carolina
Lifland, Bernard Daniel, B.S., New Jersey	Soltis, Michael Joseph Wiecech, A.B., Maryland
Lowman, Milton Edward, A.B., Maryland	Stackhouse, Howard.....New Jersey
Malinoski, Wallace Henry, Ph.G., Maryland	Stern, Maurice Lee, A.B.....New York
Matheke, George Adolph, New Jersey	Szule, Stephen Ph.M.....New Jersey
Miller, Benjamin, B.S.....New York	Taylor, Clifford Morrison.....Maryland
Miller, Meyer George, B.S., New York	Thumim, Mark, B.S.....New York
Moore, James Irving, A.B., Maryland	Turano, Leonard Francis, B.S., New York
Novenstein, Sidney, A.B., Connecticut	Van Metre, John Lee, A.B., West Virginia
Osserman, Kermit Edward, A.B., New York	Weisman, Samuel, Ph.G.....Maryland
Peer, George Foster.....West Virginia	Wolbert, Frank Olaf.....Maryland
	Zager, Saul, B.S.....New Jersey

FIRST YEAR CLASS

*Abel, Lester Jay, B.S., Pennsylvania	Bayer, Ira Eugene.....Maryland
Abramovitz, Leonard Jerome, A.B., Maryland	Bayley, George Schwing.....Pennsylvania
Adams, Thurston Ray, North Carolina	*Belt, John Hess, B.S.....Maryland
Alexander, Robert Porter, Pennsylvania	Berenstein, Stanley Harry, Maryland
Austraw, Henry Harrison, Ph.G., Maryland	Bilcovitch, Harry David, A.B., Pennsylvania
Bainbridge, Frank William, Pennsylvania	Blum, Louis Vardee, A.B., Delaware
	Brodey, David Franklin, A.B., New York
	Burgtorf, George Edward, Maryland

*Did not complete the year.

FIRST YEAR CLASS—Continued

Campbell, Edgar Thrall, A.B., Maryland	Howard, William Lawrence, B.S., Maryland
Carliner, Paul Elliott, Ph.G., Maryland	*Hugg, John Henry.....Pennsylvania
Cassidy, William Adrian, A.B., Maine	Hummel, Leonard Malcolm, Maryland
Caton, Franklin Walter.....Maryland	Hunt, Josiah Arnold.....Maryland
Coates, Stephen Paul.....New York	Hurwitz, Abraham, Ph.G.....Maryland
Cohen, Lawrence Jack, Ph.G., Maryland	Insley, Philip Asbury, B.S., Maryland
Cooper, Jules.....New Jersey	Janousky, Nathan Bonny, Ph.G., Maryland
David, Harry Walter.....Maryland	Jerardi, Joseph Victor, B.S., Maryland
*Davidson, Meyer, Ph.G.....Maryland	Johnson, Thorwald.....California
Deitz, Joseph Robert, A.B., New Jersey	Kallins, Edward Selig, Ph.G., Maryland
Delcher, Jack Edward.....Ohio	Katz, Simon, A.B.....New York
Diener, Samuel, Ph.G.....Maryland	Ketz, Wesley John.....Pennsylvania
Dorman, George Edward, B.S., Pennsylvania	Knoll, William, B.S.....New York
Downey, Regis Fallon, B.S., Pennsylvania	Kurz, Theodore George, B.S., Connecticut
Dreher, Robert Hering, B.S., Pennsylvania	Lane, Edwin Charles, A.B., New Jersey
Dunbar, John Charles, Ph.G., Pennsylvania	Lawler, Thomas Gorman, A.B., California
Echols, John Edward.....West Virginia	Leass, Reuben, B.S.....New York
Elterich, Charles Frederick, B.S., Pennsylvania	Leavitt, Abraham Charles, B.S., Massachusetts
*Ewald, August Ludwig, B.S., Maryland	Levin, Manuel, A.B.....Maryland
Farr, Robert Wilbur, B.S., Maryland	Levin, Milton, Ph.G.....Maryland
Fearing, William Lumsden, North Carolina	Levine, Matthew, B.S.....New York
Feldman, Leon Henry, Ph.G., Maryland	Maginnis, Helen Irene, A.B., Maryland
Finegold, Joseph, B.S., Pennsylvania	Mains, Marshall Paul, A.B.....Ohio
Friedman, Abraham Abbot, A.B., New York	Mancuso, Joseph, A.B.....Ohio
Gaskel, Jason Howard, A.B., Maryland	Marlett, Neumann Clyde.....New Jersey
Gelb, Jerome, B.S.....New Jersey	McNally, Hugh Bernard, Ph.G., B.S., Maryland
Gelman, Sidney.....New Jersey	Means, Milton Charles, Pennsylvania
Goldstone, Herbert, Ph.G., Maryland	Millett, Joseph, Ph.C., B.S. in Ph., Pennsylvania
Goodhand, Charles Luther, A.B., Maryland	Mirow, Richard Raymond, New York
Goodman, Howard, Ph.G.....Maryland	Moore, Alfred Charles, A.B., Maryland
Gordon, Joseph, Ph.G.....Maryland	Moulton, Olin Cates, A.B.....Maine
Gutman, Isaac, Ph.G.....Maryland	Mund, Maxwell Herschel, Ph.G., Maryland
Hanigsberg, Murray Joseph, B.S., New York	Neal, Roland Abbott.....Pennsylvania
Hartman, Ira Frank, B.S., West Virginia	Needleman, Max, B.S.....New York
Healy, Robert Fairbank, B.S., Maryland	O'Connor, Raymond Francis, Pennsylvania
Hoffman, Edward Sayer, A.B., New York	*O'Neill, James George, A.B., Maryland
Horan, William Henry, A.B., Pennsylvania	Orans, Alfred Abraham, A.B., New York
	*Perry, Joseph Dominic, A.B.....Utah
	Rabinowitz, Jacob Herbert, B.S., New Jersey

*Did not complete the year.

FIRST YEAR CLASS—Continued

Reardon, William Thomas, A.B., Delaware	Sollod, Bernard Walter, A.B., Maryland
Reier, Charles Henry.....Maryland	Spitznagle, Vernon Edward, Maryland
Riehl, Louis Milton.....Maryland	Sproul, Dorothy Gertrude, B.S., M.S.S. ....Massachusetts
Ritter, Donald Lehman, B.S., Pennsylvania	Stein, Milton Robert, Ph.G., Maryland
Roberson, Edward Leon, B.S., North Carolina	Stephens, Wilson Paschall, B.S., Virginia
Rosen, Morris, A.B.....Pennsylvania	Strader, William Robinson, West Virginia
*Rosenfeld, Myer, A.B.....Maryland	Stutzman, Clyde Malvern, B.S., Pennsylvania
Rosenthal, Charles Morton, B.S., New York	Sugar, Samuel Jacob.....Maryland
Rudo, Nathan, Ph.G.....Maryland	Sutton, Harold Lawrence, A.B., New Jersey
Sacks, Milton Samuel, Ph.G., Maryland	Taylor, Andrew Duval, North Carolina
Salamone, Louis.....Maryland	Teitelbaum, Harry Allen, B.S., New York
Satulsky, Emanuel Milton.....New Jersey	Terman, Irving, A.B.....New York
Schwartz, Daniel James, Ph.G., Maryland	Timberlake, Landon, Ph.G., A.B., Virginia
Schwartz, Theodore Allison,, Ph.G., Maryland	Tuerk, Isadore.....Maryland
Scoles, Peter Serafino.....New Jersey	Tussey, Paul Kemmler, B.S., Pennsylvania
Sedlacek, Joseph Arthur.....Maryland	Udkow, Samuel, B.S.....New York
Seidman, Henry George, Ph.G., Maryland	Wagner, Richard, A.B.....New Jersey
Sekerak, Richard John Stephen, Connecticut	Warshawsky, Harry, B.S.....New York
Shepler, Joseph Robert, B.S., Pennsylvania	Wilder, Earle Maurice, Ph.G., Maryland
Siegel, Benjamin Israel.....Maryland	Williams, Jesse Frank, B.S., West Virginia
Siegel, Milton, B.S.....New York	Wolfe, William David, A.B., Maryland
Sisserson, Barney, B.S.....New York	Woods, Richard Hawthorne, A.B., South Carolina
Smith, William Benjamin.....Maryland	Zurawski, Charles, Ph.B., Rhode Island
Snyder, Edward Leroy.....Pennsylvania	
Snyder, John Newcomer, Pennsylvania	

* Did not complete the year.

GENERAL SUMMARY OF STUDENTS ATTENDING THE UNIVERSITY OF MARYLAND

GENERAL SUMMARY OF STUDENTS ATTENDING THE UNIVERSITY OF MARYLAND

SESSION OF 1930-1931

College of Agriculture.....	169
College of Arts and Sciences.....	643
School of Dentistry.....	411
College of Education.....	150
Extension Courses	163
College of Engineering.....	321
Extension Courses	192
Short Course	95
Graduate School	169
College of Home Economics	84
School of Law.....	153
School of Medicine.....	413
School of Nursing	112
School of Pharmacy	357
Summer School, 1930.....	745
Practice School	77
<hr/>	
Grand Total	4,254
Duplications	186
<hr/>	
Net Total	4,068

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(1930-31)

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This Board is incorporated by act of the Legislature of the State, its legal title being "The Trustees of the Endowment Fund of the University of Maryland," and is independent and self-perpetuating. Its powers are limited *to the expenditure of the interest derived from the fund*, which is to be applied in the discretion of the Board for the benefit of the University. Contributions, donations and bequests are solicited from Alumni and friends. They may be made to the general or University Fund, to the Medical Fund or to any other department of the University. If intended for the School of Medicine, they may be given to the general medical fund or to some special object, as building, research, library, pathology, hospital, publication, laboratories, gymnasium, scholarship, medal, prize, etc., in which case the wishes of the donor will be strictly regarded. Attention is invited to the "Charles Frick Research Fund," already established in memory of that distinguished investigator. Checks should be made payable to J. M. H. Rowland, Treasurer, Lombard and Greene Streets, Baltimore, Md.

FORMS OF DEVISE OR BEQUEST

To School of Medicine

I give, devise and bequeath to the Regents of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic.....

(Here state amount or describe property)

To Endowment Fund

I give, devise and bequeath to the Trustees of the Endowment Fund of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic.....

(Here state amount or describe property)

THE UNIVERSITY OF MARYLAND SCHOOL OF NURSING

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Instructor in Nursing

LILLIE R. HOKE, R.N.

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VESTA SWARTZ, R.N.	Night Supervisor
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GRACE DICK, R.N.	Head Nurse—Men's Medical Ward
ELIZABETH CANNON, R.N.	Head Nurse—Men's Surgical Ward
GRACE DUTTERER, R.N.	Head Nurse—Men's Surgical Ward
FREDA FAZENBAKER, R.N.	Head Nurse—Women's Medical, Surgical, and Gynecological Ward
LUCY BRUDE, R.N.	Head Nurse—Private Hall
MARGARET CURRENS, R.N.	Head Nurse—Private Hall
GLADYS ADKINS, R.N.	Assistant Head Nurse—Operating Room
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HARRIET SCHROEDER, R.N.	Head Nurse—Post-partum Clinic
EVELYN ZAPP, R.N.	Assistant Post-partum Clinic
NAOMI ALLEN, R.N.	Head Nurse Air Conditioning System
EVA LAIGNEIL, R.N.	Assistant Air Conditioning System

GENERAL STATEMENT

The University of Maryland School for Nurses was established in the year 1889. Since that time it has been an integral part of the University Hospital, coming under the same government. The school is non-sectarian, the only religious services being morning prayers. The University Hospital is a general hospital containing about 250 beds. It is equipped to give young women a thorough course of instruction and practice in all phases of nursing, including experience in the operating room. The school offers the student nurse unusual advantages in its opportunity for varied experience and in its thorough curriculum taught by best qualified instructors and members of the Medical Staff of the University. The course of instruction covers a period of three years.

ADMISSION—Requirements: In order to become a candidate for admission to the Training School, application must be made in person or by letter, to the Superintendent of Nurses. An application by letter should be accompanied by a statement from a clergyman testifying to good moral character and from a physician certifying to sound health and unimpaired faculties. No person will be considered who is not in a good physical condition between the ages of 18 and 35. She must also show that she has a High School education or its equivalent. This is the minimum requirement, as women of superior education and culture are given preference provided they meet the requirements in other particulars.

The fitness of the applicant for the work and the propriety of dismissing or retaining her at the end of her term of probation, is left to the decision of the Superintendent of Nurses. Misconduct, disobedience, insubordination, inefficiency, or neglect of duty are causes for dismissal at any time by the Superintendent of Nurses, with the approval of the President of the University.

TIME: Students are admitted in February and October.

HOURS ON DUTY: During the probation term the students are on duty not more than six hours daily. During the Junior, Intermediate and Senior years the students are on eight-hour day duty, with six hours on Sunday and Holidays, and ten-hour night duty. The night duty periods are approximately five or six months during the three years.

SICKNESS: A physician is in attendance each day, and all students when ill, are cared for gratuitously. The time lost through illness in excess of two weeks during the three years must be

made up. Should the authorities of the school decide that through the time lost the theoretical work has not been sufficiently covered to permit the student to continue in that year, it will be necessary for her to continue her work with the next class.

VACATION: Vacations are given between June and October. A period of three weeks is allowed the student at the completion of the first year and four weeks at the completion of the second year.

EXPENSE: An entrance fee of thirty dollars (\$30.00), payable on admission, is required of all students. This fee is not returnable. A student receives her board, lodging, and a reasonable amount of laundry from the date of entrance. During her period of probation she provides her own uniforms made in accordance with the hospital regulations. After being accepted as a student nurse, she wears the uniform furnished by the hospital, and in addition to this is paid five dollars (\$5.00) a month. Her personal expenses during the course of instruction and training will depend entirely upon her individual habits and tastes.

Five-Year Program

In addition to the regular three-year course of training the University offers a combined Academic and Nursing program leading to the degree of Bachelor of Science and a Diploma in Nursing.

The first two years of the course (or pre-hospital period), consisting of 68 semester hours, are spent in the College of Arts and Sciences of the University, during which period the student has an introduction to the general cultural subjects which are considered fundamental in any college training. At least the latter of these two years must be spent in residence at College Park in order that the student may have her share in the social and cultural activities of college life. The last three years are spent in the Training School of University Hospital, which is affiliated with the School of Medicine of the University.

MERCY HOSPITAL SCHOOL OF NURSING

The Mercy Hospital School of Nursing was established in 1899 and incorporated under the laws of the State of Maryland in 1901. It has developed the art of the profession according to the high standard requisite to qualify for Registered Nurse.

Requirements for Admission.

A candidate desiring to enter the School of Nursing should apply to the Superintendent of Nurses by letter or in person at least six weeks before the entrance date. It is preferred that

she apply in person accompanied by her mother or guardian. If a personal interview is not possible, a written application may be submitted.

Age.

Candidates should be between the ages of eighteen and thirty-five years.

Physique.

Applicants should be of average height and good physique. Teeth and eyes should be attended to before entering the School, and tonsils removed if not in good condition. Every applicant is required to send in a certificate of health by her family physician. A physical examination is also made by the school physician during the preliminary period.

Education.

Applicants for admission should present at least high school certificate of graduation or its equivalent in educational values. The credits of preliminary education are fully accounted and the nurse who is the better qualified finds such a foundation more to her advantage as she progresses through the years of study.

Calendar.

Students are admitted September 1st and February 1st.

Length of Course.

The course of instruction covers three years. It is divided into a preliminary term of four months, a freshman term of eight months, a junior term of one year, and a senior term of one year.

Conditions of Acceptance.

The Superintendent of Nurses decides as to the fitness for the work and the propriety of retaining or dismissing a student at the end of the term of probation or during its course. She may also, with the approval of the faculty, terminate the connection of a student with the School in any justifiable instance. At the end of the preliminary period, if the student's health, general education, and natural aptitude prove satisfactory to the Director of the School and the Sister Superior, she shall be appointed for enrollment as a student nurse.

Expenses.

An admission fee of fifty dollars is required from all students. This covers the cost of uniforms and books required during the preliminary course.

Should the student for any reason leave the school before completing the course, this fee will not be returned, nor may she take with her any part of the equipment.

After four months' probation, candidates, if they possess the necessary qualifications, are admitted to the School of Nursing proper. They receive ten dollars per month to help defray incidental expenses. No compensation is given, the education received being considered sufficient return for service rendered. Board, laundry, etc., are furnished by the institution.

Four weeks before admission candidates should forward the fifty-dollar entrance fee, and measurements for uniforms and aprons, which will be in readiness upon their arrival. No orders will be considered until this fee is received.

THE FIVE-YEAR COURSE

Leading to B.S. Degree and Diploma of Graduate Nurse

The University of Maryland, in affiliation with the Mercy Hospital School of Nursing, offers a combined Academic and Nursing program.

The completion of this course entitles the student to the degree of Bachelor of Science from the University of Maryland, and to the diploma of the Mercy Hospital School of Nursing.

Graduate nurses who hold college degrees are greatly in demand, especially for positions in administration and teaching. This program consequently offers a distinct advantage.

Outline of Course

Two years of this course (pre-nursing or post-nursing period) consisting of 70 semester hours are spent in the College of Arts and Sciences of the University, with the usual College vacations. At least the latter of these two years must be spent in residence at College Park in order that the student may have her share in the social and cultural activities of College life.

Requirements for Admission.

Students electing such a course must before entering the School of Nursing, satisfy the entrance requirements of the University of Maryland. Applicants must be personally adapted to professional nursing.

Fees and Other Expenses.

During the two years which the students spend at College Park they maintain themselves, and pay their own College fees. (See University of Maryland bulletin.)

Throughout the Nursing School Course the hospital provides without expense to the student maintenance and care during temporary illness.

BULLETIN

OF THE

SCHOOL OF MEDICINE

UNIVERSITY OF MARYLAND

Vol. XV

MAY, 1931

No. 5

AS AN EXPRESSION of esteem, affection and admiration, this issue of the Bulletin is dedicated to the memory of a distinguished quartet of alumni: DOCTORS SAMUEL THEOBALD, class of 1867, emeritus professor of ophthalmology, Johns Hopkins University; SAMUEL T. EARLE, JR., class of 1870, formerly professor of physiology and diseases of the rectum, Baltimore Medical College; HIRAM WOODS, class of 1882, emeritus professor of ophthalmology and otology, University of Maryland, and JOHN C. HEMMETER, class of 1884, emeritus professor of clinical medicine, University of Maryland. We mourn their absence from our midst, but cherish with pride their memory. In his specialty each one of them emblazoned his name upon the escutcheon of immortality. All of them were gifted teachers, master clinicians, eminent scientists, zealous defenders of the best traditions of medicine, and friends of man. By their deaths, the University, the profession and the community have sustained a severe loss. Though their voices are stilled, they have left behind them a priceless heritage of accomplishment.

*"On fame's eternal camping ground,
Their silent tents are spread,
And glory guards with solemn round,
The bivouac of the dead!"*

SOME CLINICAL ASPECTS OF DIGITALIS THERAPY*†

By E. COWLES ANDRUS, M.D.

BALTIMORE, MD.

The interest of the clinician, as regards digitalis, while in no way opposed to that of the pharmacologist, lies in a somewhat different direction.

The usual methods of biological standardization involve the determination of the amount of any given preparation required to stop the heart of a cat or frog. Moreover, the reported observations upon the pharmacological action of digitalis have dealt, in the majority of instances, with its effect upon the hearts of normal animals. Fewer, but no less important, are the studies of the effects of this drug upon the circulation of animals under certain abnormal conditions.

By pharmaceutical and pharmacological methods digitalis has been purified and, in some instances, has been resolved into its constituent glucosides. There is now available to the physician a variety of digitalis preparations for oral, or hypodermic, or even intravenous administration, all of which have been accurately standardized.

The effects of digitalis upon the heart, as demonstrated by physiological methods, are two-fold:

- (1) The drug stimulates the vagus center in the medulla, and
- (2) It exercises a direct action upon the cardiac muscle.

By its action upon the vagus it delays the conduction of excitation between auricles and ventricles and thereby increases the interval between auricular and ventricular contraction; it sometimes slows the rhythm of the heart as a whole. These effects may be obliterated by atropine, which paralyses the vagal endings. Due to its direct effect upon the myocardium digitalis increases the tone and the amplitude of contraction of the cardiac muscle. These results are obtained following the administration of moderate amounts of the drug.

*From the Cardiographic Laboratory of the Johns Hopkins University and Hospital.

†Resume of paper read before University of Maryland Biological Society.

If, however, larger doses are given certain other effects are noted. The heart rate may be excessively slowed; conduction between auricles and ventricles may fail altogether so that both beat independently. Nausea and vomiting are produced. Certain irregularities of beat may develop, usually characterized by premature ventricular contractions. Finally the heart may cease to beat, its ventricles contracted tightly and failing to relax.

It should also be mentioned that the action of digitalis is "cumulative"; i. e., it may fail to become apparent until a certain amount of the drug has been given. Digitalis is excreted by the kidneys of an adult human at the rate of only 0.1 gm. per day after therapeutic amounts have been administered. Its effects may therefore persist for days after its administration has been stopped.

Digitalis is employed clinically to relieve circulatory insufficiency. Therein lies the chief difference between the interests of the pharmacologist and the clinician in this drug. The former tests its toxic action upon the heart of a normal animal; the latter utilizes its therapeutic properties to restore the abnormal circulation of a patient with heart disease to, or toward, its normal efficiency. The question might logically be raised, therefore, whether the biological standardization of digitalis contributes to its therapeutic value. Can the therapeutic potency of any digitalis preparation be gauged by testing its toxicity upon animals?

It was with this in mind that Dr. L. E. Martin carried out a carefully controlled study at the Johns Hopkins Hospital during 1926. Three specimens of digitalis leaves were obtained which had been carefully standardized in several European laboratories by both the cat and the frog methods. The efficacy of each was then determined in bringing about a therapeutic effect in unselected cases of myocardial insufficiency with oedema. The details of the method are to be found in Dr. Martin's report.* Suffice it to say here that it involved an enormous amount of time and effort to obtain accurate information as to the degree of the digitalis effect in each case.

The results of the clinical standardization of these preparations are compared in the following table with those obtained by biological methods.

**Jour. Pharm. and exp. Therap.*, 1927, 31, 229

		Clinical	Biological
	Dosage in gms. per kilogram body weight	Per cent of strength of Digitalis C.	Per cent of strength of Digitalis C.
A.	0.0517 gm.	75.8%	62%
B.	0.227 gm.	141.5%	116%
C.	0.0392 gm.	100.0%	100%

It is significant that, although the quantitative results of the clinical standardization did not correspond accurately to those of the biological, it was possible to differentiate between three preparations of different potencies. If justification of the biological standardization were needed such is to be found in this study by Dr. Martin.

That digitalis in adequate amounts exerts a favorable influence upon the failing circulation in the majority of instances is a well-established fact. The mechanism of its action in these circumstances is less obvious; it may become clearer when more is known concerning the pathological physiology of circulatory failure.

All cases of myocardial insufficiency may be classified in two groups according to whether or not auricular fibrillation is present. In the first group the auricles are beating excessively rapidly and totally irregularly. The ventricles respond to impulses reaching them from the auricles, often so irregularly that the ventricular filling is impaired and its output is correspondingly diminished. In the second group the ventricular contractions are not totally irregular but are insufficient in force to maintain an adequate circulation.

In the first group the major therapeutic effect of digitalis is ascribable to its stimulation of the vagus. This brings about a delay in the transmission of the irregular series of impulses from auricles to ventricles, permitting more adequate ventricular filling and thus enhancing ventricular output. The influence of digitalis in strengthening the contraction of the cardiac muscle may also play a part here, but this effect is most apparent in the second group. The ventricular rate is characteristically slowed by therapeutic doses of digitalis in cases with auricular fibrillation; it may remain unaltered in cases with a regular ventricular rhythm even though, at the same time, a conspicuous therapeutic effect has been brought about by this drug.

In the course of years the conception of the indications for the administration of digitalis has undergone alteration. Time was when

it was considered inadvisable to prescribe it in cases of myocardial failure associated with certain valvular lesions. This idea is no longer held. Eggleston* has summarized the newer concepts of the indications for this drug as follows:

- “(1) The indication for the administration of digitalis is determined by the degree of heart failure and not by the cause of the failure.
- (2) The dosage and the criteria of the action of digitalis are identical, irrespective of the cause of the heart failure.”

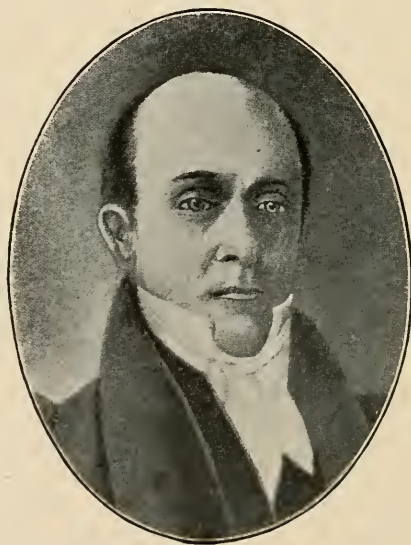
Digitalis should be prescribed, therefore, for any patient showing signs of myocardial insufficiency regardless of the pathological process causing it.

Given the indications for digitalis it should be administered in amount sufficient to bring about a therapeutic effect or to cause symptoms or signs of intoxication. It is desirable to avoid overdosage as far as possible and yet, if, as sometimes happens, signs of improvement of the circulation fail to appear, one can never be certain that adequate quantities of digitalis have been given until one or more of its toxic manifestations arise. Such uncertainty may be avoided, in the majority of instances, by employing a stable preparation the approximate potency of which has been established. Herein lies the clinical value of biological standardization. The dosage may be further complicated if the patient has recently received digitalis in some form. As has already been mentioned, its effects are cumulative and the therapeutic or toxic effect may be produced by far smaller amounts of the drug in a patient to whom digitalis has recently been administered than in another who has received none before coming under observation. It is, therefore, always advisable, before prescribing digitalis, to determine how much the patient has already received, and how recently he has received it. Still another difficulty may be occasioned by the necessity of changing preparations. This may be avoided by utilizing the drug in the same form throughout the period of treatment of any case. In so far as possible it is best to prescribe it in the same form to all cases.

The most stable forms of the drug are the dried powdered leaf or some of the so-called “purified preparations”. Tincture of digitalis is notoriously unstable unless preserved in air-tight bottles of dark glass. Its therapeutic potency may decrease and, at the same time, its toxicity may increase, upon standing.

*Am. Jour. Med. Sci., 1920, 160, 625

In any group of cases of myocardial insufficiency none of which has recently received digitalis a therapeutic effect is usually obtained by total quantities of the drug which vary relatively little when computed upon the basis of body-weight. This amount corresponds closely to 1.5 gm. per 100 lb. body-weight for any preparation having a cat-unit of 1.0 as pointed out by Eggleston. The rate at which digitalis is administered, i. e., the length of time allowed for giving the amount calculated to produce a therapeutic effect must be governed by the severity of the symptoms. Thus, in a case showing alarming signs of acute cardiac failure, it may be necessary to administer the full amount within a few hours. In such instances strophanthin may be used. In less severe cases digitalis may be given in doses of 0.2 gms. (III grains) three times daily until the full dosage has been reached. In any case, after the therapeutic effect has been obtained it must be maintained by the administration of 0.1 gm. (gr. I ss) daily.



JOHN BEALE DAVIDGE
One of the Founders

FOCAL INFECTION AND GOITRE

By ALEXIUS MCGLANNAN, M.D.

BALTIMORE, MD.

Increased activity of the thyroid gland is one of the many factors involved in our resistance to infection. Enlargement of the gland is associated so constantly with the course of an acute infection that it seems a normal function. The intensification of the symptoms of hyperthyroidism whenever an infection is engrafted on a previously existing exophthalmic goitre points out the close relation existing between the thyroid gland and the reaction of the organism to injury.

Apparently the reaction makes a demand on the gland for thyroxin beyond the limit of its manufacturing capacity. In an attempt to meet this demand it has been suggested that the thyroid secretes and sends out imperfectly developed chemical compounds which produce the intense symptoms noted when an acute infection occurs in a patient suffering from hyperthyroidism.

Experimental study as well as clinical observation shows the influence of infection on the development of hypertrophic changes in the thyroid. Some focus of infection in some part of the body is often found in the patient with Graves disease, just as is the case in those suffering from arthritis; and the treatment or removal of such a focus is likely to be followed by marked improvement in the symptoms of the thyroid lesion.

With goitres this relationship seems particularly marked when the infection exists in the throat or the accessory sinuses of the nose. These infections, therefore, can be considered as one of the etiological factors in goitre, as an influence on the course of the thyroid disease and as a factor in the persistence or recurrence of symptoms of hyperthyroidism after subtotal thyroidectomy.

An infection of the tonsils or sinuses setting up a secondary change in the thyroid may produce either hypo or hyperthyroidism. Usually the reaction leads to hyperthyroidism, but atrophy of the glandular epithelium with the development of a state bordering on myxoedema occurs often enough to be important. Prompt control of the primary infection is necessary if such patients are to be spared the effects of a permanent dysthyroidism.

The hyperthyroid reaction is more common. The developing goitre and the constitutional symptoms soon attract attention. Taken early,

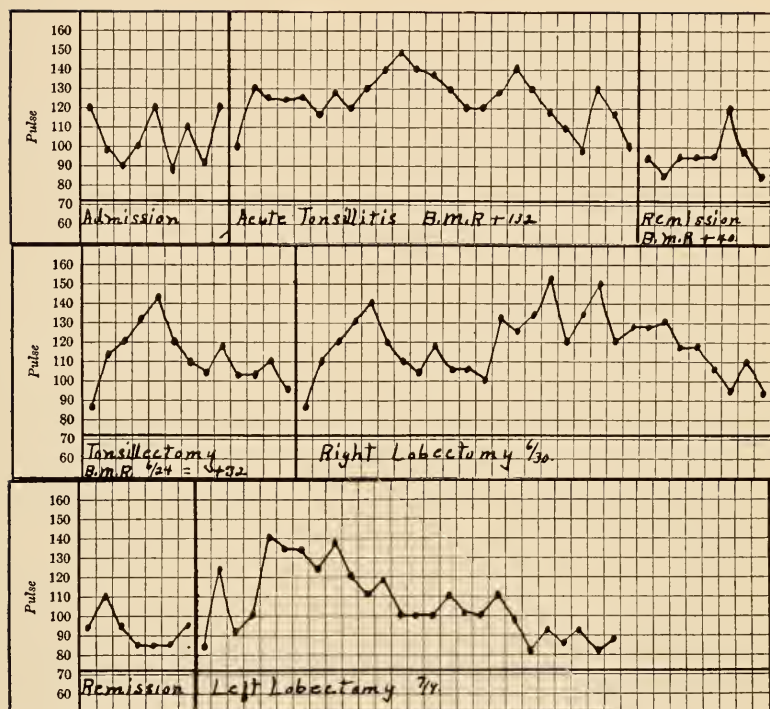
when the constitutional symptoms are mild, many of these patients are relieved of their goitre and its symptoms as soon as the focus of infection is eradicated.

With a fully developed toxic goitre the influence of a focus of infection on the hyperthyroidism is marked and the management of the patient becomes a serious problem. Judicious study must determine whether the thyroid or other operation should be performed first. It is impossible to have any fixed rules to govern such cases. With a mild hyperthyroidism of short duration it seems best to remove the source of a focal infection before attacking the goitre. In many instances the thyrotoxic symptoms have been abated to a great degree by this procedure. In addition, the tonsillectomy or similar operation becomes a trial operation, the reaction to which gives a measure of the patient's resistance to surgical operation in general. On the other hand, when the patient showing marked toxic symptoms has been brought into an operable condition by preliminary medical treatment, thyroidectomy is done before any other operation is attempted. The removal of the toxic goitre relieves the heart and other organs and in this way diminishes the risks of subsequent operations.

The patient with a toxic goitre is likely to react violently to any surgical operation. Since the cause of this reaction resides in the goitre, primary operation on the thyroid seems the better proceeding when the hyperthyroidism is severe.

A record of the pulse rate permits a reasonably accurate estimation of the intensity of the hyperthyroidism. The charts shown below indicate how difficult it is to decide between primary tonsillectomy and primary thyroidectomy.

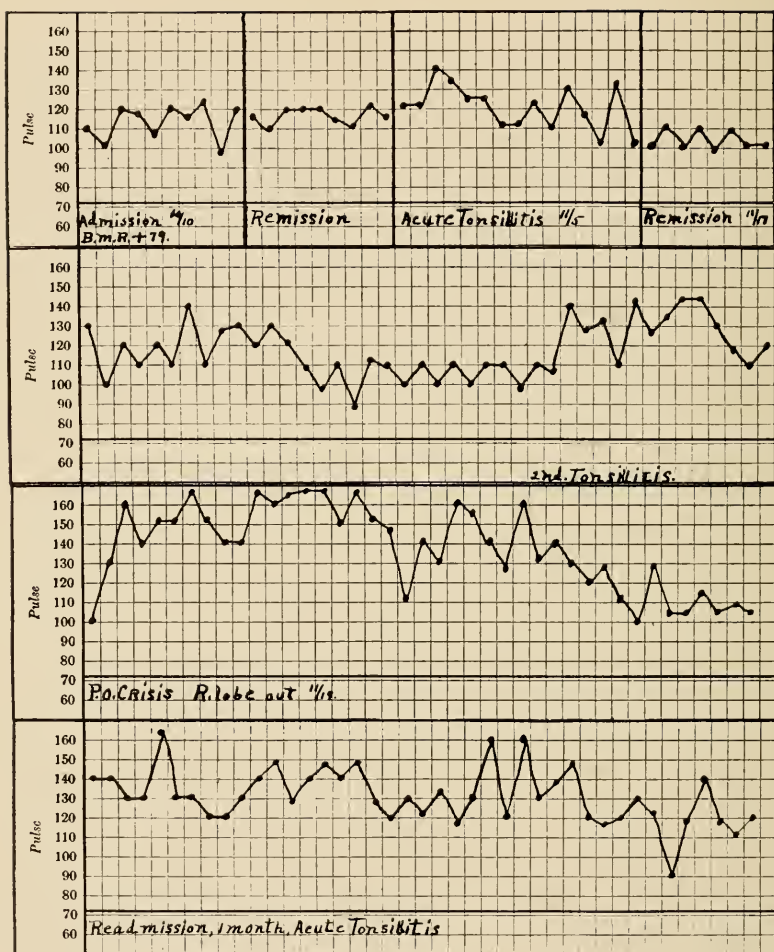
In case one, the patient was a white man, age 28 years, who had a toxic goitre with chronic infection of his tonsils. Soon after admission to the hospital he went through an attack of acute tonsillitis during which he had a severe thyrotoxicosis with a Basal Metabolic Rate of plus 132. This was followed by a remission and in this period his tonsils were removed by Doctor Zinn. There was considerable post-operative reaction, which, however, quickly subsided. Using this experience as a trial operation, thyroidectomy was planned for a day about two weeks later. In the operating room the patient became excited to such a degree that the operation was abandoned and he was sent back for further pre-operative treatment. When



Case 1. Toxic Adenoma, acute tonsillitis, tonsillectomy, subtotal thyroidectomy in two stages. Mercy Hospital May, 1928.

he was taken up a week later he was quiet and had good self-control. In spite of this, his condition forced us to stop the operation after the right lobe and isthmus had been removed. The wound was left open. There was a severe post-operative reaction which was followed by a remission and ten days later the left lobe was operated upon and the wound closed. This time the reaction was less severe and of much shorter duration. The man made a good recovery and has been free from symptoms for more than a year.

In case two, the patient was a white female, age 19 years, who had an exophthalmic goitre and also chronic tonsillitis. She was admitted in a very intense exacerbation of her hyperthyroidism. With some difficulty she was brought to a stage of remission by medical treatment. She then developed an acute tonsillitis in the course of

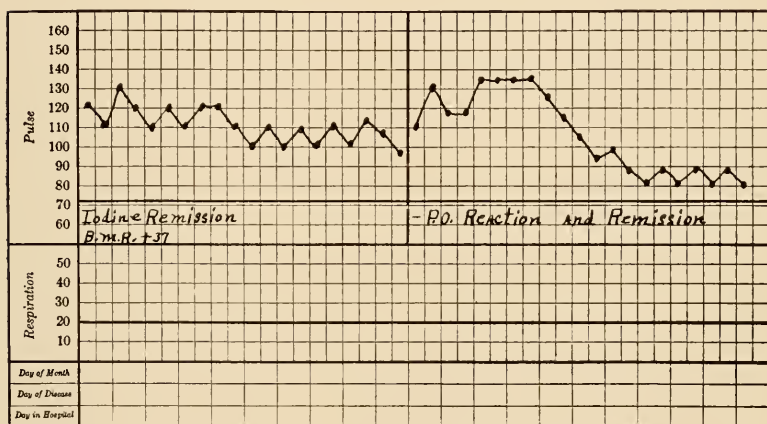


Case 2. Exophthalmic Goitre, acute tonsillitis, right lobectomy, post operative crisis, recurrent tonsillitis. Mercy Hospital October, 1929.

which her hyperthyroidism became pronounced. After another remission the thyroid operation was done. After the right lobe and isthmus had been removed her condition was such that the operation was terminated at this stage and the wound left open. She went through a severe post-operative crisis, but gradually improved and left the hospital 136 days after admission. She returned a month later with another attack of acute tonsillitis, and again showed a severe reaction.

In the first case the primary tonsillectomy was successful, but the hyperthyroidism remained so great that a two stage thyroidectomy was required. In the second case the primary partial thyroidectomy was followed by an acute crisis, and the patient has passed through another tonsillitis with a great hyperthyroid reaction.

We are convinced that any operation on the second patient would precipitate a crisis and that the remaining lobe of the thyroid should be operated upon before her tonsils are removed. Probably a trial ligation should precede the lobectomy.



Case 3. Exophthalmic Goitre, no focal infection. Iodine remission. Sub-total thyroidectomy in one stage. Mercy Hospital February, 1928.

Contrast the course of these two cases with that of case three. Here the patient had a well defined exophthalmic goitre but no focal infection. Preliminary treatment brought about a remission, and operation was followed by a mild reaction with almost immediate subsidence of the tachycardia.

The value of the proper use of iodine in the preliminary treatment is shown in case three. Iodine in the management of goitre is a drug to be used with care and under control. The work of Kimball and Marine which proved its value as a prophylactic has been misapplied in treatment. Periodic administration of small doses of iodine to children will prevent the development of goitre. Similarly, administration of the drug will help the adolescent patient with goitre, and is valuable in certain cases in pregnant women. In spite

of the marvelous relief and abatement of symptoms that follows the use of Lugoll's Solution in most cases of toxic goitre, the drug should be given with caution and always under careful supervision. Certain patients are not benefited and occasionally iodine medication seems to do harm. The relief of symptoms is not permanent and the degree of beneficial results obtained by the first course of treatment cannot be secured by subsequent administration of the drug.

To one who must face the necessity of operating upon a patient suffering from a toxic goitre it seems fair to ask his colleagues to refrain from the administration of iodine to adult patients with goitre except as a carefully controlled treatment in the hospital as a preliminary to operation. To take this safeguard from the surgeon increases the number of multiple stage operations he will be compelled to perform.

The indiscriminate use of iodine by the laity either as such or in salt or drinking water is extremely dangerous and should be condemned.

In the immediate post-operative treatment, iodine has a place of great importance, and in the remote post-operative management of the patient, minute doses often give great relief from certain of the residual symptoms.

As a preventative of recurrent hyperthyroidism after operation the search for and eradication of foci of infection is an important procedure. Among these, tooth infections follow those of the nose and throat in frequency of occurrence and importance of effect. Many of the residual symptoms which persist after thyroidectomy disappear or diminish in severity when a focus of infection can be eradicated.

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ATYPICAL POLLEN HAY-FEVER*

By HOWARD M. BUBERT, M.D.

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In 1819, Bostock first described hay-fever as a clinical entity. In 1856, Blackley, of Manchester, England, began his extraordinary series of studies upon the role of pollens in this disease. In the course of this very thorough investigation he devised methods that enabled him to determine the exact pollen, or pollens, to which the sufferer was sensitive. One of these procedures was of the greatest importance and forms the basis for our present skin tests in allergic cases. These, of course, are one of our main diagnostic aids in determining the etiological agents concerned in a case of protein hypersensitiveness.

Since the original studies of Blackley, a great deal of work has been done, by many observers, upon this condition. As a result, a clear-cut clinical entity has been developed under the name of hay-fever. It is commonly understood that these cases are due to the pollen of certain weeds. It is also well understood that the pollens of two groups of plants produce symptoms at different times during the spring, summer and fall; a spring group producing symptoms that are known to the laity as rose colds, in the late spring and early summer, and a fall group producing symptoms in the late summer and early fall.

The above facts are so well known, and certain criteria are apparently so constantly present in this condition, that there is a general hesitancy about making a definite diagnosis of pollen disease, in the absence of any one of them. The purpose of this paper is to state these criteria, and then to show by case reports that one or more of each and every one may be absent without invalidating the diagnosis. The correctness of the diagnosis is strongly suggested, even though not proven beyond all possible doubt, by the excellent results following routine administration of extract of the pollens seemingly incriminated by study of the different cases. Because of the great improvement in the condition of many of these atypical cases, when treated in this manner, we feel the possibility should be kept in mind in any suspicious case, even though it may not present an entirely

*From Protein Clinic of the University of Maryland Hospital.

classical picture. At this point, may I say that it was necessary to select cases markedly benefited by treatment, for the purposes of this paper. It should not be supposed that all cases of non-seasonal hay-fever respond so well; in fact, the greater number do not.

Coryza. The local manifestations of hay-fever occur in the upper respiratory tract and the mucous membrane of the eye, and closely simulate a common cold. When the symptoms are severe there may be a rise in body temperature and, even though this does not actually occur, the patient almost invariably has a sensation of warmth that has given the condition its name of hay, or autumnal fever. This subjective sensation of feverishness and lassitude may precede the local symptoms and thus usher in the seasonal attack.

There may be several variations here, ranging from the absence of one of the usual symptoms of coryza to an entire freedom from this unpleasant manifestation of the disease.

Dr. W.—For nine years patient suffered from conjunctivitis during the summer of each year, which terminated spontaneously the latter part of September. During this period, numerous eye specialists were consulted in different cities in the eastern part of the country without relief. Two years ago the patient saw a well known Baltimore ophthalmologist who diagnosed a possible pollen sensitivity and advised skin tests. The patient saw me the next season, in 1929, and skin tests were done to the pollens of the spring and fall groups, including those of the grasses and the ragweed family. These were all negative. Because of these negative tests, some of the extract of the pollens named were introduced into the conjunctival sac of both eyes without the production of a reaction.

Because of the history, a routine course of pollen therapy was advised, in spite of the negative skin and conjunctival tests. This was carried out with excellent results. The improvement in the patient's condition was so marked that he wrote for extract the following year in order to repeat the course.

This case deviated from the usual picture of pollen hay-fever in several ways, showing none of the nasal symptoms of coryza, none of the systemic discomfort commonly found in hay-fever, and negative skin and conjunctival reactions to the pollen extract that, therapeutically, gave almost complete symptomatic relief. That there was a problem in diagnosis present would seem to be proven by the failure of numerous eye specialists to recognize the etiological factor concerned. Not until an ophthalmologist of great experience was consulted did any one even suggest the possibility of pollens causing the condition. From my experience I do not believe this failure of diagnosis would often occur with the average, competent ophthalmologist but I cite the case to show that it may happen.

Mrs. G.—Middle aged white female. For several years the patient has been suffering with nasal stoppage, sneezing and general lassitude the latter part of each summer. Associated with this has been a lesser degree of conjunctivitis. Coincident with the hay fever, during some seasons, asthma has occurred. Thorough skin testing to the pollens of the spring and fall groups, together with most of the tree pollens prevalent in this locality, were completely negative. The history seemed so clear cut, however, that a routine course of treatment with fall pollen extract was suggested and carried out. Complete freedom of symptoms was obtained throughout the season.

The exact opposite of the previous case is encountered here, namely, an absence, or practical absence, of eye symptoms, with the occurrence of severe nasal and bronchial manifestations of allergic sensitivity. Again skin tests were entirely negative.

The following case is cited, despite the fact that it does not come strictly under the heading of hay-fever, simply to show that any part of the respiratory tract, or the eyes, may be involved singly, or in varying combinations, without the production of a typical picture of hay-fever, as generally recognized.

Mrs. S., an elderly white female, has been suffering from bronchial asthma each spring for about twelve years. There have never been any evidences of hay-fever. The symptoms occur from the latter part of May until the end of June and are very severe. Skin tests revealed a marked sensitivity to all the pollens of the spring or grass group. A routine course of desensitization to these pollens was attempted but we were never able to attain a dose ordinarily considered effective, because of the marked local reactions obtained. In spite of this the patient was entirely relieved of symptoms. A similar course of treatment the following spring again protected her completely.

The occurrence in this case of bronchial asthma, definitely due to pollen sensitivity, and unassociated with upper respiratory or eye symptoms, is quite unusual. The positive skin tests, together with the excellent therapeutic results, seems sufficient proof as to the nature of the case. Needless to say, asthma accompanying hay-fever and due to the same pollen or pollens, is common. Its frequency is variously estimated as being from 30% to 40% of all cases of pollen hay-fever.

The next criterion commonly demanded of a suspected case of pollen hay-fever is seasonal occurrence. The two seasonal groups ordinarily mentioned, as stated above, are the spring and fall. Frequently this is not the case as the following reports will show.

Miss T.—Young, white female. Came to me about four years ago, complaining of hay-fever which was present the entire summer, but which was especially severe in the latter part and continued until frost. During the entire year, however, she suffered from a chronic conjunctivitis of the utmost severity. A very competent ophthalmologist suggested that pollens were causing not only the hay-fever but also the conjunctivitis, and sug-

gested skin tests. After a great deal of delay, she came for study. Thorough skin testing revealed sensitivity to both the spring and fall pollens and, in addition, a marked reaction was obtained with the pollens of certain trees, which pollinate in this section of the country in the late winter and early spring. A very active reaction also occurred with orris root, the basis of most face powders and other cosmetic preparations. This, of course, explained the lack of characteristic seasonal variation ordinarily expected of these cases. About the month of March orris root face powder was eliminated, with the substitution of rice powder and as a result, the conjunctivitis disappeared within twenty-four hours, in spite of the fact it had been present for some years. A certain degree of nasal obstruction remained, however.

This case demonstrates that many confusing pictures may be encountered in definite pollen cases, complicated by sensitivity to some other substance or substances, which prevent the expected variations in severity of symptoms with the different seasons of the year.

Mrs. C.—Middle aged white woman. Complaint perennial asthma. Questioning revealed that she had suffered from what seemed to be both spring and fall hay-fever. Some years before she had begun to have asthma coincidentally with the hay-fever symptoms but it did not stop when the hay-fever season was over in the fall. Since its onset, it has been present almost constantly, being aggravated, however, during the period of pollination of the ragweed group.

Skin tests revealed marked sensitivity to the members of the spring and fall pollen groups; in addition, she reacted strongly to the extract of canary feathers. In spite of her negative answer to my question regarding the possession of pets, when the history was taken, she now gave the information that she raised and sold canaries, having fifty of them at the time of the examination.

Densitization with the extract of large and small ragweed pollen was begun immediately and the patient was instructed to have her family dispose of the birds and to thoroughly eliminate all traces of them from the home, before her return. This was done and the following spring, desensitization with spring pollens was carried out, and at the proper time, fall treatment was repeated. As a result of these procedures, the patient has obtained practically complete relief from both the asthma and the hay-fever.

This case further demonstrates how the typical variations ordinarily expected may be obscured by sensitivity to some substance other than pollen, in this instance an animal epidermal product, without invalidating the pollen diagnosis and without making pollen therapy any less effective, if proper steps are taken to eliminate the other factor, or factors present.

White male, 45. Complaint perennial hay-fever. Close questioning repeatedly failed to make the patient agree that his symptoms were worse at any particular season of the year. He had been to numerous nose and throat specialists. Finally, no relief having been obtained, the last one consulted referred him for allergic study.

Following failure to get any information from the history that might tend to incriminate pollens as the etiological agents, skin tests were done with spring and fall pollens together with tests to incidental substances, as orris root, dust, cotton, animal epidermal proteins and the pollens of trees. The last named gave definitely positive reactions and the pollens of the spring

and fall groups responded by tremendous wheals, erythema and itching. The substances to which he was found sensitive covered a period of pollination beginning late in the winter and extending through the spring, summer and middle fall. Thus his symptoms were accounted for, for about nine and a half months of the year. In the fall, upper respiratory infections are common and the swollen, turgescient mucous membrane of the hay-fever patient, especially one such as this who had had symptoms for so long a time, was an ideal culture medium. Consequently, it seemed likely that secondary infection might well cause a continuation of symptoms during the period of two and a half months when the atmosphere was free of pollen.

This patient was first seen in the spring of 1930, and routine desensitization with spring pollen extract was started immediately with a fall pollen course following at the proper time. After the first few treatments the patient experienced great relief, and as the doses were increased and reached a more effective level, he became almost symptom free. Desensitization to the pollens of the trees that seemed to be involved was to have been started in January of this year. The patient had been doing so well for the past seven or eight months, however, he decided to forego them, waiting to see whether symptoms would reappear.

An element other than the pollens commonly sought for entered into this case, complicating the picture and making the diagnosis a matter of doubt for a long time. The correctness of the allergic diagnosis would seem to have been proven by the remarkable relief experienced by the patient after local treatment of many types had failed.

The third criterion, commonly associated with a diagnosis of pollen as the etiological agent in a case of hay-fever, is positive skin tests to the offending pollen, or pollens. Instances of cases varying widely from this rule are cited above. A further example is as follows:

C. M., female colored child, age seven years. Complaint; following measles two years ago, her eyes became red and painful. This condition, since then, has been practically absent in the winter, but beginning in May each year and continuing until frost the symptoms are severe. The condition practically disappears with frost. Examination by one of the men in the eye department revealed small, injected elevations around the cornea, at the limbus. A diagnosis of pollen conjunctivitis was made and the patient referred for allergic study. The family and past histories were both negative to all manifestations of allergy and skin tests to spring and fall pollens were also negative. Because of this, the tests were repeated intradermally and these, likewise, were negative.

In the absence of any more rational therapy, a routine course of pollen treatment was advised and carried out, with excellent results as the patient was practically symptomless during the season in which she usually experienced the most discomfort. It is of interest to note that her younger brother, age 5 years, gave an almost identical history and was studied in the same manner with the same negative pollen tests. He, also, received a course of pollen extract but without any appreciable benefit.

Conclusions—The criteria usually accepted as being essential for a diagnosis of hay-fever due to pollen are given. Cases are cited to show that a number of variations from the usual may occur and that care must be exercised in the diagnosis of the condition.

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DOUBLE UTERUS-DOUBLE VAGINA

By LEO BRADY, M.D.

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Although congenital abnormalities of the female reproductory organs are not uncommon only rarely does one see such complete lack of union of the structures developing from the two Mullerian ducts as in the case which is herewith reported.

M. S., age 20, was admitted to the University Hospital, complaining of dysmenorrhoea. The family and general past history were essentially negative. The menstrual periods had started at the age of 16. They had been regular and very scant, but of 7 days' duration. During these seven days the pain was so severe that the patient remained in bed. These recurring painful periods had greatly affected the general health. An appendectomy had been done several years previously but without bringing about any relief from the menstrual pains and, indeed, after this operation she often complained of severe pain on the right side between her periods. As marked constipation had also developed following this operation it seemed likely that these pains were due to post-operative adhesions.

Examination—June 26, 1930—This patient was a poorly nourished and nervous young woman. The general physical examination was essentially negative. The breasts were poorly developed. Abdominal palpation elicited definite tenderness over the old right McBurney scar; otherwise it was negative. The external genitalia looked normal but running directly upward from the outlet was a definite septum, separating two distinct vaginae. High in each vagina a very small but otherwise apparently normal cervix could be seen (Fig. 1). Internal pelvic examination was not entirely satisfactory but gave the impression that two distinct infantile uteri were present. The ovaries could not be felt.

The condition was fully discussed with the patient. Since all the usual conservative measures had been tried without success in an effort to clear up the dysmenorrhoea, she was quite willing to submit to any operative procedures that were deemed necessary. It seemed almost impossible that she could ever become pregnant—not because she had two uteri but because both of these were infantile. A laparotomy was definitely indicated because of the post-operative adhesions which were giving so much pain between the periods.

Operation (July 10, 1930)—Under gas and ether anaesthesia the septum dividing the two vaginas was first removed. This was done because it was felt that, if the patient married, this rigid septum would cause very definite dyspareunia. As I dissected out this septum I was very much impressed by the number of vessels in it. The hemorrhage was controlled with some difficulty. A lower abdominal incision was then made. A number of firm adhesions were found binding together the caecum and the anterior abdominal wall. They unquestionably had been responsible for the pain in the right side of the abdomen. The pelvic organs presented a very unusual picture. There were two definite uteri. From each uterus arose a round ligament, a broad ligament, a utero-sacral ligament, a fallopian tube and a tubo-ovarian ligament. Both uteri were small, the fallopian tubes infantile; the ovaries very small. The medial side of each uterus was perfectly smooth. There was a very definite band of fibrous tissue separating the two uteri and running from the posterior surface of the bladder to the anterior surface

of the rectum. This ligamentum recto-vesicale is well shown in Fig. II. The post-operative intestinal adhesions were freed and then both uteri, both fallopian tubes and the two ovaries were removed. A supravaginal hysterectomy was done on both sides, the cervical stumps being left in situ.

On the fourth day after the operation there was some post-operative hemorrhage from the vagina and it was found necessary to take the patient back to the operating room. The bleeding was coming from the area where the former septum had joined the posterior vaginal wall. This bleeding was easily controlled and further convalescence was uneventful.

It may be felt by some that the operative procedure carried out in this patient was very radical, but inasmuch as it is quite certain that the patient could never become pregnant and as she is now satisfied with the result of the operation and is having no trouble from hot flushes, I do not believe that we did too much.



Fig. I shows two cervixes divided by a septum running from the perineum to the top of the vaginal vault.

Thanks to the splendid work of the embryologists we now understand in some measure how these congenital abnormalities develop, but there still remain a great many questions that need to be solved. It is, of course, known that each Mullerian duct is the forerunner of one fallopian tube and of half the uterus and of half the vagina. At some point in embryonic life it is normal for there to be two uteri and two vaginae, but a little later these two uteri and vaginae



Fig. II. Two uteri. Attached to the lateral side of each uterus a round ligament, a fallopian tube and an ovary can be seen. The ligamentum recto-vesicale is seen to completely separate the two uteri.

fuse and the septum separating them disappears. It is evident, therefore, that when in adult life we encounter instances of double uterus and double vaginae we can conclude that they have resulted through failure of fusion to take place in embryonic life between the distal half of the two Mullerian ducts.

There have, however, been many different theories advanced as to the nature of the factors that prevent the union and fusion of the two Mullerian ducts. Felix* gathered from the literature the following list of conditions that have been suggested as hindering this union.

1. Hydronephrosis.
2. Abnormal distention of the bladder and rectum.
3. Anomalies in the formation of the abdominal wall (hernia umbilicalis, cleft pelvis, abdominal clefts, abnormally short yolk-stalk).
4. Fetal peritonitis.
5. Ligamentum recto-vesicale.
6. Shrinkage of the lig. rotunda.
7. Too great breadth of pelvis.
8. Long persistence and too great separation of the mesonephroi or the primary excretory ducts.
9. Congenital tumors.

It is of interest that in this case the ligamentum recto-vesicale was so marked. Krieger,† in an interesting article, published in 1858, felt that the persistence of this ligament might really be the cause of double uterus and vagina. Felix, however, thinks it more likely that the persistence of this ligament is a result rather than the cause of a non-union of the two Mullerian ducts. Kehrer‡ has pointed out that this ligament is sometimes lacking in cases of divided uterus.

Summary—The case is one of double uterus and vagina in a young woman. The size of the ligamentum recto-vesicale which was present gives added interest. It may have been because of the persistence of this ligament that the Mullerian ducts on the two sides failed to unite and in consequence a condition of double uterus and vagina was produced.

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SYMPTOMS REFERABLE TO IMPACTED MOLARS

By HARVEY G. BECK, M.D., and WALTER L. OGGESEN, D.D.S.

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Many articles have appeared in the literature in recent years dealing with the relation of dental disease to Internal Medicine. In these articles attention has been directed, on the one hand, to the fact that various dental anomalies occur as an effect produced by certain organic diseases, constitutional inadequacies, metabolic disturbances, vitamine deficiencies, endocrine imbalances, and hereditary influences, and, on the other hand, it has been established that dental sepsis is frequently the cause of many diseases affecting the heart, blood vessels, kidneys, joints, gall-bladder, nerves, eyes, etc., all naturally attributed to secondary infection. This infection theory has been given much prominence through such channels as the medical and lay press, public health instruction, school hygiene, dental clinics and the exploitation of commercial dentifrices in which the radio figures prominently. As a result of this intensive and wide-spread propaganda, other dental factors capable of producing clinical evidence of disease such as the mechanical effects of malposed teeth or impacted molars are apt to be overlooked or entirely disregarded. It is the significance of the latter as an etiological factor in the production of disease syndromes which the authors wish to stress in this report. The subject has apparently not received the attention it merits as comparatively few references are to be found in the literature.

Although any tooth may become impacted the most common impactions are the lower third molars, the upper third molars and the cuspid teeth. The impaction may be slight or deep and the tooth may be found almost anywhere in the mandible or in the maxilla including the nasal and maxillary sinuses. The following facts relating to the subject are gleaned from the paragraphs on the etiology, symptoms and diagnosis of impacted teeth from "Essentials of Oral Surgery" by Blair and Ivy.

Etiology. Many pathologic conditions cause delayed eruption, displacement and impaction of teeth. The growth of the jaws and the movement of the teeth are in a forward direction, consequently,

anything which interferes with this forward movement or growth will cause impaction. Acute infectious fevers such as scarlet fever and measles may interfere with their normal growth and development by producing a deposit of dense bone. Contracted arches, the result of mouth breathing and severe traumatism to the jaws have a similar effect by causing deposit of lime salts in the cancellous tissue. Ankylosis of the mandibular joint in childhood also arrests the growth of the jaws so that insufficient space is provided for the eruption of all the teeth. Too early extraction of the deciduous teeth by arresting the development of the jaws may also be a contributing factor.

In addition to injury, disease, and developmental defects, it is conceivable that impacted teeth may result from hereditary causes, as from the transmission of small jaws of one parent and large teeth from the other.

Symptoms and Diagnosis. Impacted teeth may be present without giving rise to any symptoms. Others cause pain, either local or referred. The latter is neuralgic in character and distributed along branches of the trifacial nerve. Sometimes, especially in case of impacted lower third molars, cellulitis is set up which may be accompanied by trismus. In any patient suffering from acute cellulitis in the posterior portion of the mouth with inability to open the jaws, impaction of the third molar should be suspected. If the tooth is partially erupted the diagnosis is apparent on inspection, in other cases the diagnosis depends on the absence of the tooth from the denture and the x-ray findings.

DISTURBANCES CAUSED BY IMPACTED TEETH

Local Effects. An impacted third molar may press against the crown of the second molar and cause decay of that tooth or itself become the seat of caries around the point of contact. It may also cause pressure absorption of the root of the second molar. Exposure and devitalization of the pulp from these causes may give rise to neuralgia. Neuralgia may be caused by pressure of the roots of the impacted tooth on the inferior dental nerve or its branches. The irritation produced by an impacted tooth may cause condensation of the surrounding bone with pressure on the nerve or its branches.

General Effects. Various forms of reflex nervous disturbance may result from impacted teeth. Pain resembling true neuralgia may

be referred to any of the branches of the trifacial nerve, or they may be the cause of obscure headaches. More serious nervous or even mental disturbances have been attributed to this cause. They may be a contributing factor in such conditions as epilepsy, chorea, and dementia precox, as direct benefit has been derived in some cases by the removal of impacted molars even without the presence of local symptoms.

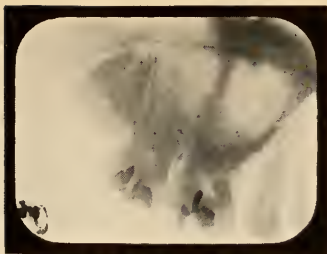
Illustrative Cases. In order to avoid the tedium of too great detail only one case will be reported at length. An abstract will suffice to illustrate some of the clinical manifestations in the remaining cases.

CASE I. The patient, a college girl, 18 years of age, sought medical advice in the spring of 1922 for pain in her eye-balls and lachrymation. Her family history was essentially negative. The only previous illnesses of note were diphtheria in early life and recurrent attacks of tonsillitis. The ocular symptoms developed toward the end of her school year and were attributed to eye strain. However, the condition persisted despite her summer vacation during which she did not subject her eyes to any strain. Her general condition at this time was good except for infected tonsils. This diagnosis was confirmed by Dr. Mitchell, October 25, 1922. The sinuses were not affected. Dr. Harry Friedenwald examined her five days later. He reported that she had a low grade of astigmatism which was corrected by glasses and that her vision and eye-grounds were perfectly normal. Dr. Breitstein also confirmed the diagnosis of infected tonsils and noted some hypertrophy of the right inferior turbinate. All her physicians concurred in the opinion that her eye symptoms were possibly the result of the infected tonsils and accordingly their removal was advised. Following the operation there was a slight but temporary improvement.

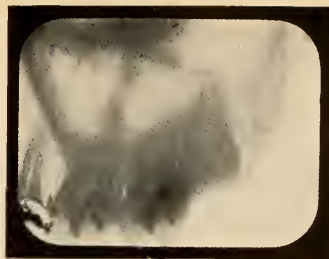
On April 21, 1923, six months after the operation, she returned still complaining of pain in her eye balls. The records of the examination made at that time show that she was 64 inches in height and weighed 136 pounds which was her maximum weight. Blood-pressure was 122, systolic, and 70, diastolic. Pulse rate was 100 beats to the minute and her temperature at 1 P. M. was 100 degrees, F. Her general appearance was good. Pupils were even and reacted normally and the extraocular movements were normal. There was no tenderness over the sinuses or mastoids. The teeth and gums appeared healthy. The tonsils had been successfully removed. There was no enlargement of the cervical glands and the thyroid was normal. The fingers were long and tapering and exhibited a very fine tremor. The palms were moist and the wrist and elbow joints were hyperextensible. A careful examination of the chest revealed no evidence of pulmonary disease and the heart was negative, except for a faint, soft systolic murmur at the apex. Nothing abnormal was found in the abdomen. The reflexes were active and equal on both sides. Dermatographism was pronounced and there was some tendency to malar flushing.

On May 7, 1923, she was examined by Dr. Pincoffs. His results coincided with those of the previous examination with the exception of the pulse rate which had dropped to 72 and the systolic murmur which had disappeared. He noted, however, that her third molars had not erupted.

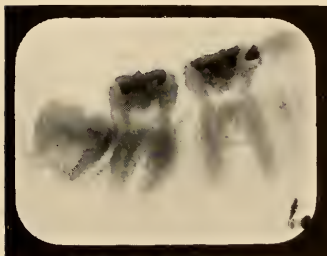
On account of a slight elevation in temperature, rapid pulse and some symptoms suggesting thyroid intoxication she was admitted to Mercy Villa for a four weeks' course of rest treatment with the result that her pulse



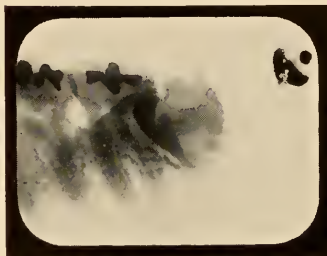
CASE I.—Upper Left.



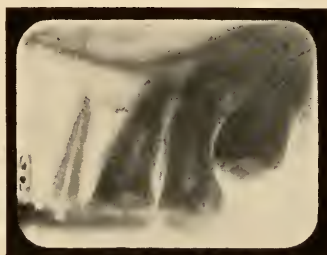
CASE I.—Upper Right.



CASE I.—Lower Left.



CASE I.—Lower Right.



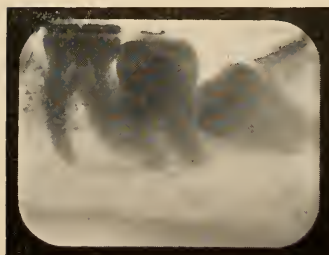
CASE II.—Upper Right.



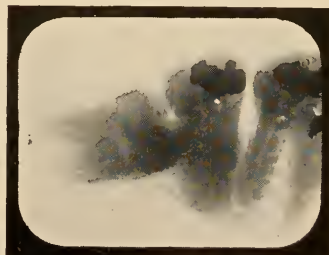
CASE II.—Lower Left.



CASE II.—Lower Right.



CASE III.—Lower Right.



CASE V.—Lower Left.

slowed down and averaged from 55 to 65 per minute. Her temperature dropped below normal and her general condition improved but she continued to suffer with headaches and pain in the eye-balls, especially the left. She again consulted an oculist who found the eye-grounds normal but changed the glasses on account of astigmatism.

She then returned to her native city where she followed treatment under the care of Dr. Holtzapfel.

Owing to a mild febrile course—afternoon temperature ranging from 99 degrees F. to 100 degrees F.—and repeated attacks of cough persisting for periods of weeks or months pulmonary tuberculosis was suspected. However, frequent physical examinations and radiographic studies of the chest failed to reveal any evidences of tuberculous lesions in the lungs. She continued to suffer in spite of treatment for the next three years. During this period she complained of much headache. The eye condition remained the same and the temperature still remained slightly elevated in the evening.

In 1926 she complained also of severe earache affecting the right ear. This was followed by slight deafness and a morning cough. She always felt tired and languid. She has never had any localized pains or swelling about her teeth or gums.

The Wassermann was negative and the blood counts and urinary examinations were always normal.

The basal metabolic rate ranged within normal physiological limits.

About this time it was ascertained that three impacted molars were diagnosed radiographically by her dentist, Dr. Hoffman, of York, three years previously, who considered them responsible for her symptoms owing to their position and had advised their removal at that time.

On September 28, 1926, Dr. Oggesen confirmed the diagnosis and advised the removal of the lower left third molar, the upper right third molar and the lower right third molar. These were removed on October 2 and October 16, 1926. All symptoms promptly subsided after the extraction of these teeth. She has remained free from symptoms since and her general health has been excellent.

This case is of interest because of our failure to appreciate the importance of unerupted molars as a possible etiological factor despite the fact that our attention was directed to them by Dr. Pincoffs and that a dental examination made early in her illness revealed the presence of impacted molars.

CASE II. In April, 1927, Miss I., aged 22 years, presented herself for examination on account of severe headaches, nervousness and attacks of loss of consciousness.

The history, taken by Dr. Legge, revealed the fact that she had suffered almost constantly with these headaches for a period of five years and that she had been subject to seizures which were epileptiform in character and preceded by a distinct aura.

Her mother and grandmother were both victims of migraine.

The patient exhibited a well marked enteroptotic habitus, a non-toxic adenomatous thyroid, enlarged cervical glands, impacted upper right and left third molar and impacted left lower third molar. She was under-nourished, easily fatigued and extremely nervous. Her blood pressure was 102, systolic, and 75, diastolic. The white cell count was 10,850. The urine, gastric analysis and Wassermann were normal.

The upper and lower right third molars were removed April 23, 1927, by Dr. Oggesen. The lower left third molar was not removed but she was advised to have it removed if her symptoms were not relieved.

Following the removal of the two impacted molars the headaches diminished in frequency and severity. She has only had a few epileptiform seizures shortly after the removal but none since. To quote from a letter addressed by her mother on February 5, 1931, "she only had a few 'fainting' spells after those molars were taken out but her headaches continued for two years. She is in better health right now than she has ever been."

This patient presented two symptoms (migraine and epileptoid episodes), in both of which the exciting factors are usually difficult to ascertain. Evidently the impacted molars were responsible for these symptoms as their removal was followed by complete restoration to health. She has had no headache for two years and no attacks with loss of consciousness for even a longer period.

CASE III. Mrs. E., aged 31, came to the Clinic for a diagnostic study, October 17, 1927, on account of sick headaches from which she suffered for many years. These were of the ophthalmic type of migraine with hemianopsia and tetanic like contractions of the muscles of the hands and forearms. She averaged one or two attacks a month. They usually confined her to bed for one or two days and she always vomited during the attacks and often became mentally confused and at times developed aphasia. She gave a family history of migraine, both her parents and two sisters suffering with ophthalmic migraine. Besides headache she suffered with chronic spastic constipation, uterine retroversion and external hemorrhoids.

X-ray examination showed the lower right third molar impacted against the second molar. This tooth was at once removed by Dr. Oggesen.

A month later, December 17, 1927, records show that she did not have one attack of headache since removal of the impacted tooth. On December 4, 1928, a year later, she stated that the "headaches recurred but not with the same frequency or severity."

July 11, 1929—records show that the "patient has had very few headaches."

On November 21, 1929, she stated that "she has only had two headaches since July and these were not very severe."

This patient was unquestionably benefited by the removal of the impacted molar notwithstanding the fact that the disease was strongly hereditary and other contributing factors, such as intestinal and pelvic diseases co-existed.

CASE IV. W. E. The patient, an ex-aviator, 35 years of age, was a well developed individual with no physical defects except a broken nose and impacted right upper molar. For the past 10 years he complained of severe headaches affecting the right side, migrainous in character. During this period he consulted many physicians, all of whom made the same diagnosis, namely, Migraine.

These headaches occurred on the average of about once a week and were so intense that he was compelled to leave his work and go home and lie down and resort to the use of strong anodynes.

A specialist, who attributed these attacks to the effect of his broken nose, recommended corrective operation, which he refused.

Later he was advised by Dr. Nathaniel Beck to have his right upper molar, which was impacted, removed. This was done 8 months ago by Dr. Lucien Brun. Since then he has not had any headaches and has been enjoying perfectly normal health.

CASE V. Miss M., age 56, referred by Dr. Ebert for examination on January 6, 1931, for neuralgic pains behind the left ear radiating over the left side of neck, and vertigo. She had suffered with this pain for four years and it was always aggravated by cold draughts so that she found she could sleep better by lying on her left side in order to keep the neck warm.

The examination showed that she was under-nourished and had a blood-pressure of 180, systolic, and 90, diastolic, with a pulse rate of 102 per minute and temperature 99.6 degrees F. The lower left third molar was found to be impacted and pressing on the inferior dental nerve.

Three days after the removal of the tooth the vertigo and pain in left side of the neck had entirely disappeared. The blood-pressure had decreased to 152, systolic, and 60, diastolic, the pulse to 78 per minute and temperature to 98.6 degrees F. She has not had a return of her symptoms since.

Several other patients suffering with hypertension, not included in this report, were greatly benefited by the removal of impacted molars.

Anderson reported in the Penn. Med. Journal, April, 1929, two patients suffering with vertigo who were entirely and promptly relieved by removal of impacted molars.

Conclusion—That impacted molars are responsible for some obscure symptoms cannot be doubted. Unfortunately, they frequently do not give rise to local disturbances so that attention is not directed to them by the patients. One should, therefore, bear in mind the possibility of impacted molars and in difficult cases such as enumerated in this report the examination should not be considered complete without a thorough dental investigation.

THE MAKING OF A PHYSICIAN*

By CHRISTOPHER C. SHAW, PH.B†

BALTIMORE, MD.

Robert Louis Stevenson has said, "There are men and classes of men that stand above the common herd; the soldier, the sailor and the shepherd not infrequently; the artist rarely; more rarely still the clergyman; the physician, almost as a rule. He is the flower of our civilization". Stevenson then enumerates the qualities of heart and mind so essential to success for the young doctor and tells us that generosity, discretion, tact, Heracleian cheerfulness and courage are the attributes that qualify the true physician.

Let us examine for a moment the origin of medicine in remote times to determine what precepts and principles have actuated the men who have gradually built up the ideals of the profession which we aspire some day to adorn.

Throughout the known history of man the care of the sick and injured has been of particular interest to certain members of human society. Indeed, the quality of any civilization can be measured by the type of care given the wounded and suffering, the methods of alleviating the ordeal of childbirth, the provision made for the insane, the infirm, and the aged, and by the interest shown in child health and welfare.

One can readily imagine the growth of sympathy among primitive peoples who with cries and gestures taught, with broken words, that it is right for all men to have pity on the weak.

The savage and his family and tribe were constantly subject to injuries in battle, to the violence of storms, to accident and ill health and to trauma from wild beasts. For long ages such catastrophes preyed upon his mind and body and were thought to be a visitation from the gods. Relief was sought through the medium of the tribal priest, who endeavored by means of sacrifices and incantations to appease the evil spirit. Frequently, the long suffering savage would,

*Address delivered at College Park, Maryland, March 14th, 1931, to the University of Maryland Premedical Students.

†University of Maryland, School of Medicine, Class of 1931.

in the course of time, be restored to health and to his child-like mind his recovery was due solely to the ritual of the tribal holy man, who had petitioned the deity for mercy and perhaps given the patient some potion of herbs or other simple remedy. Little by little such experiences crystallized into useful knowledge in the hands of an observant priest, who soon came to be regarded as the medicine man or healer. His ignorance he cloaked with magic and superstition but he did possess a very real share of the spirit to relieve the sufferings of his fellowmen.

Thus we see an early and intimate relation between the priest-craft and the art of healing. Certain gods became the patrons of health and happiness and were constantly importuned to shed their blessings on the tribe and nation. Gradually as the priest-hood grew in numbers and in power, their knowledge of the healing art increased and we find the secrets of ancient medicine jealously guarded by one sect of society and passed on by word of mouth and later by writings from one generation to the next.

This tendency to veil the art of medicine in shrouded mystery was very strong until the time of Hippocrates, the great Greek physician, who was born in 460 B. C. on the island of Cos and adorned the Golden Age of Pericles. Because of his extraordinary powers of accurate observation and logical thinking he is called the "Father of Medicine". He delivered medicine and surgery from the thralldom of superstition and speculation and described forty-two clinical diseases which form almost the only records of the kind for the next 1700 years. His pupils and followers made up an organized guild of physicians bound by an oath and stipulation, which today is the basis of the scientific spirit and the ethical ideals of the medical profession. This group of physicians, called the Aescapiadae in honor of Aesculapius, the god of healing, realized the importance of a common ownership of medical knowledge by a trained profession and the need of each member of that group contributing to the others whatever he had discovered by observation or experiment which would be of benefit to all. Instead of holding useful knowledge for himself alone, it became his duty to lay it at the disposal of mankind. As the experimental method, expounded by Hippocrates, gradually took root and began to change medicine from purely an art to more of a science, these high ideals made all discoveries available to the human race.

Moreover, the Aescapiadae were a group of men who were actuated solely by their desire to devote their time and talents to the relief of suffering humanity, whose membership embraced only men of singleness of purpose, unselfish, high minded, zealous in their efforts to wrest from nature the keys to her manifold mysteries.

The spirit of this society of physicians has come down to us today and is indeed a rich heritage. How are we as medical and premedical students going to prepare ourselves to be worthy of the ideals given us by our fathers of old? How and where are we to acquire such useful knowledge and skill in the application of the same as will enable us to do our share in relieving some of the suffering and maladjustments among our fellowmen?

The selection of a medical school is a matter of vital importance to the premedical student, who should exercise considerable care in determining the basis of his choice.

Dr. William H. Welch of Baltimore has said that the "fundamental object of medical education is to make good doctors, which is the function of a medical school and the basis upon which the curriculum is built. It is impossible to impart to the student the entire content of medical and surgical science but the student should acquire a fair knowledge of the fundamental subjects and a power to use the instruments and methods of his profession. The medical school should give him the right attitude toward his patients and his fellow members in the profession and above all should put him in a position to carry on the education which he has only begun in medical school. The training of his powers and methods of study are the important things."

Perhaps the best thing that a medical education can do is to infuse into the student what Sir Thomas Browne in his "*Religio Medici*" has called the "philosophic spirit", which should dominate and direct his life work.

It would seem that in this age of speed and specialization, that we are prone to forget the attributes of mind and heart which characterized the doctor of Stevenson's day. An appreciation of kindness and understanding are not derived solely from page 92 of the text-book but rather from association and intimate mental contact with the men who will act as your professors and instructors during the next four years. It is they who will lead you out of the wilder-

ness by interpreting the meaning and correlation of scientific data and the spirit of research. Such men are an inspiration in that they unconsciously reflect the aims and ideals of our great profession, while imparting to you a thorough knowledge of the fundamental medical sciences. The University of Maryland Medical School has a goodly share of such men on her faculty.

Mr. Savage and Mr. Shelley have told you of the opportunities that await you in Baltimore and now I wish for a moment to stress what will be required of you in return for the privilege of studying at any school which has and maintains its reputation of turning out good doctors.

The training in medical school is long and expensive. The hours are often tedious and the burden of study may seem, at times, overwhelming, so that some day you may wonder if the game is worth the candle. But I assure you that the next four years, or six years with hospital training included, of both mental and physical discipline will be the most important period in your life in determining your usefulness to society and the scope of your activities later on. Doubtless, all of you have heard that the practice of medicine is the hardest of all occupations and the most exacting of the professions, for Science is a jealous mistress. Sir William Osler tells us that success in the profession of medicine is achieved in one way only: that is, by the diligent and continuous employment of "The Master Word," which is "Work".

How vital it is, then, that we learn at once to appreciate this as soon as we begin the study of medicine. Constant and conscientious application to your studies and laboratory work is the "sine qua non" of success in medical school. One must realize that one has entered upon a very serious undertaking and it will behoove one to put aside collegiate diversions and amusements and attend strictly to the matter at hand. One reason why the mortality at Maryland in the first year of the Medical School has been rather high in the past is that the freshmen have not seemed to realize that they have embarked on a professional career. "Experimentum periculosum; judicium difficile" is as true today as it was two thousand years ago—for not only the patients' health and happiness are your responsibility, but a human life, which is at all times sacred and can never be replaced, may be at stake. Upon you and upon me and upon the fellow members of

our profession will rest this greatest of all responsibilities, and we must do our part to the best of our ability day by day to so train ourselves that we will not be found wanting in times of crisis or disaster.

So I say to you, if you are not afraid of hard work and if you really want thereby to become a good doctor, the University of Maryland Medical School is the logical place for you to continue your studies. Savage has told you something of the history of the school and of its record on the state boards. Shelley has outlined practical aspects of the curriculum and the hospital facilities; and, in conclusion, may I say that the Medical School welcomes students from College Park who bring with them generosity, discretion, tact, cheerfulness and courage.



UPTON SCOTT
First President of the Medical and Chirurgical Faculty

ANNOUNCEMENT

University of Maryland, Division of Medical Extension

A Combined Review Course for Physicians

June 8th—June 27th, 1931

During three weeks of June, 1931, the Division of Medical Extension of the University of Maryland will offer its eighth annual review course for physicians. This is a single, intensive, general course, which will last only three weeks. It is designed primarily to give the physician in general practice the opportunity of studying those methods of diagnosis and of treatment which are in current use in the University Clinics. By careful use of the short period of time available a wide range of subjects is briefly presented. The greater part of the course is devoted to general medicine, but surgery and the various specialties are also included.

Information:

Questions concerning the course may be addressed to the Dean of the Medical School, University of Maryland, Baltimore.

Requirements for Admission:

The applicant must be a registered physician in good standing. Preference will be given to physicians registered in Maryland.

Enrollment:

The course this year will be limited to twenty men. It is suggested that applications be made promptly as the course will be filled up in the order that applications are received. Address: Dean of the Medical School, University of Maryland, Baltimore.

Fees and Tuition:

A matriculation fee of \$25.00 will be charged to all registrants from Maryland. For those coming from other states a charge of \$50.00 will be made.

Registration and Matriculation:

Monday, June 8, 1931, 8.30 A. M., northeast corner Lombard and Greene Streets, Baltimore.

Daily Schedule:

- 8.00-10.00—Lectures.
- 10.00-11.30—Ward Rounds.
- 11.30-12.30—Clinic.
- 12.30- 1.30—Lunch.
- 1.30- 2.30—Dispensary Clinic.
- 3.00- 4.30—Laboratory and Therapeutic Procedures, X-Ray and Electrocardiography.

Lectures:

The morning lectures will deal with modern advances in diagnosis and treatment. The subjects will be chiefly from the field of general medicine and surgery with a few lectures devoted to the specialties.

Ward Rounds:

The class will be divided into groups for ward rounds and will visit the ward patients on the medical, surgical, and special services, in the University, Mercy and City Hospitals.

Clinics:

There will be a daily clinic in the Amphitheatre of the University Hospital. These clinics will be given by different departments.

Dispensary Clinics:

The class will be assigned in groups in rotation to the Dispensary Clinics for pediatrics, genito-urinary diseases, syphilis, and gastrointestinal diseases.

Laboratory, Therapeutic Procedures, Roentgen Diagnosis, Electrocardiography.

In these afternoon periods instruction will be given in the laboratory methods of diagnosis. Modern functional tests such as those employed in diseases of the kidneys and of the liver will be demonstrated. The technique of, and the indications for the use of such procedures as transfusions, venesection, infusion, and spinal puncture will be taken up, and demonstrated when possible. There will be a number of periods devoted to X-Ray diagnosis. Electrocardiography and the interpretation of electrocardiograms will be briefly presented.

BULLETIN

OF THE

SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

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DOCTOR HIRAM WOODS

Death has called another of our colleagues and friends from us. Hiram Woods, Jr., who filled the chair of Ophthalmology and Otology in our School for many years, died on January 15, 1931.

Doctor Woods was born in Baltimore, November 11, 1857, the son of Hiram and Helen Chase Woods, a family held in highest esteem in this city. He was educated at the private school of the late George G. Carey and entered Princeton University in 1875. Among his classmates there were (President) Woodrow Wilson, (Judge) Robert R. Henderson, of Cumberland; Robert Bridges, of New York; J. Edwin Webster, of Belair, and our own colleague, Charles W. Mitchell. It was a famous class that was graduated in 1879 and Hiram Woods was able to attend its jubilee celebration in 1929, when he was received with great honor.

The year following his graduation he spent as a special student in the Department of Biology under H. Newell Martin, at the Johns Hopkins University. In the fall of 1880 he entered the Medical School of the University of Maryland, where he received the degree of M.D. in 1882. His instructor in diseases of the eye and the ear was Julian J. Chisolm, a teacher of great force. It was he, undoubtedly, who interested the young student in these branches of medicine, and it was his influence which soon led him to devote his professional life to their service. After graduation, Doctor Woods



DR. HIRAM WOODS, JR.

spent a year as resident at Bay View Hospital; then he became attached for two years to the Departments of Medicine and of Dermatology at the University of Maryland, during which period he was also engaged in general practice.

In 1885, however, he chose ophthalmology and otology as his specialties, though in later years he devoted himself more and more exclusively to the former. He was devoted to his teacher, Doctor Chisolm, and became one of his assistants both in office practice, at the Presbyterian Eye, Ear and Throat Hospital which Doctor Chisolm had founded in 1882 and at the University Hospital (University of Maryland). At the former hospital Doctor Woods was also associated with the late Herbert Harlan, then Assistant Surgeon and his senior by a few years.

Doctor Woods enjoyed great advantage from these associations. The service was very large and varied. An earnest and able student, a tireless worker, he made splendid use of his opportunities. For years he served as Assistant, and as Assistant Surgeon and on the retirement of Doctor Chisolm, he was made one of the Surgeons of the Presbyterian Eye, Ear and Throat Hospital in 1894. He held this position until 1917 when he resigned.

It was not many years before Doctor Woods was recognized as one of our ablest specialists. His scientific contributions were welcomed in the many societies of which he was a member, both those interested in general medicine and those devoted to ophthalmology and otology. They were clinical studies characterized by the most careful observation and patient investigation.

He began his work as teacher early in his medical career. From 1885 to 1888 he was Assistant Demonstrator of Anatomy at the University of Maryland. From 1888 to 1894 he was Professor of Eye and Ear Diseases at the Woman's Medical College. He became clinical professor on Professor Chisolm's retirement in 1896, and was elected his successor at the University of Maryland in 1902; he filled this position with distinguished ability and success. His students admired him as a conscientious and painstaking teacher who never wearied in the endeavor to clear away their difficulties nor to enable them to recognize the lesions and processes of disease and appreciate their significance. His cordial interest in his students won their lasting affection.

He resigned his chair in 1921 and was made Professor Emeritus and later, in 1924, by unanimous vote of the Council, the honorary degree of LLD. was awarded him by the University which he had served so long and so well.

Doctor Woods was ophthalmic and aural surgeon of the staff of many hospitals, the Union Memorial Hospital, the Hospital for the Women of Maryland, the Hospital for Crippled Children, the Shepard and Enoch Pratt Hospital, and the Washington County Hospital. There were few physicians in our community who took a livelier interest in medical societies, City, State and National. In 1906 he was elected President of the Medical and Chirurgical Faculty of Maryland and he was a member of its Council from 1905 and chairman of the Council from 1907 to 1928. He was regular in his attendance at the meetings of the American Medical Association and was Chairman of the Section on Ophthalmology in 1912-13. In 1919-20 he was President of the American Ophthalmological Society. His name was also found on the roster of the Southern Medical Association, the American Otological Society, the Academy of Ophthalmology and Oto-Laryngology and he was a Fellow of the American College of Surgeons.

His great interest in what we may call the public relations of the profession made him the leader in this State in the effort to secure legislation to prevent the ravages of ophthalmia neonatorum. He inaugurated the movement in Maryland in 1891 with a study of "Blindness in the United States," accepted chairmanship of a Committee of the Medical and Chirurgical Faculty of Maryland and secured the passage in 1894 of the first bill in Maryland enforcing notification of cases of ophthalmia. This subject retained his interest throughout the rest of his life and the work of the Maryland Branch of the Society for the Prevention of Blindness rested chiefly upon his shoulders, as its Vice-President from 1907 until his death; for a long time he was acting President. He was also an officer of the National Society for the Prevention of Blindness from 1915 till his death.

In like manner, he was interested in the elevation of the standards of ophthalmic practice and participated actively in the creation of the American Board of Ophthalmic Examiners; he served as Examiner on this Board from 1915 to 1920 and again from 1923 to 1926.

Doctor Woods was a member of the First Presbyterian Church of Baltimore and served for many years on its Board of Directors.

As a physician, Doctor Woods displayed the same conscientious thoroughness in his practice, public as well as private, that characterized the man in all other relations of life; every duty that devolved upon him was sacred; neither personal inconvenience, nor fatigue, nor distractions of pleasure could interfere with its performance.

His relations with the members of his profession were cordial and friendly. There were few who had as many friends, as devoted friends, as he. With his ophthalmological colleagues his relations were most intimate and never during my acquaintance of forty years have I heard an unkind word spoken of him, nor a harsh or unjust word spoken by him of others.

Doctor Woods was able to continue in active practice until a couple of years ago when illness and increasing feebleness obliged him to retire. He bore the enforced idleness and inactivity uncomplainingly and with great patience. He suffered from the severance of those relations with his colleagues and his patients—they were all his friends as well—relations which he had always so greatly enjoyed. His greatest happiness he found in the bosom of a loving family. In 1886 he was married to Miss Laura Hall. Their married life was blessed by mutual sympathetic understanding and devotion. Mrs. Woods and their four children, Doctor Alan C. Woods, of Baltimore; Mrs. Alexander Armstrong, Mrs. William H. Hudgins and Mrs. Arthur W. Machin, Jr., survive him.

To those who had the good fortune to be reckoned among his friends, his death which has come as a deliverance, leaves the memory of "a righteous man and blameless in his generations," one who had learned "to do well, to seek justice, to relieve the oppressed."

March 1, 1931.

HARRY FRIEDENWALD.

DR. JOHN C. HEMMETER

The death of Dr. John C. Hemmeter, emeritus professor of clinical medicine, leaves another hiatus in the ranks of that brilliant and able group of physicians who constituted the Faculty of Physic during the early years of the present century.

Dr. Hemmeter was born in Baltimore, April 25, 1863, and died, February 25, 1931. His parents were John Hemmeter and Matilda Ziegler Hemmeter, who emigrated to this country from Germany in 1848. He married, in January, 1893, Helene E. Hilgenberg, of Baltimore. His primary education was obtained at the Kaiserliches Gymnasium at Wiesbaden, Germany, and the Baltimore City College. After graduating from the latter institution in 1881, he returned to Wiesbaden for a course of instruction at the Fresenius Chemical Laboratory, during which time he was also a student of music under H. Jahn. In 1882, he matriculated in the School of Medicine of the University of Maryland, whence he received the degree of M.D. with the class of 1884. A few years later he entered the graduate department of the Johns Hopkins University and in 1890 was granted the degree of Ph.D. by that institution. St. Johns College of Annapolis, in 1904, conferred upon him an honorary LL.D., and the University of Maryland, in 1913, its Sc.D. From 1885 to 1888, he was resident physician at Bay View Hospital and from 1897 until his retirement, in 1922, he was a member of the Faculty of Physic at the University of Maryland and Director of the Clinical Laboratory. In 1903, on the death of Dr. Francis T. Miles, he was given the chair of Physiology and was made one of the consulting physicians to the University Hospital and a Regent of the University. The Physiological Laboratory was organized and largely equipped through his personal efforts.

Dr. Hemmeter limited his practice to diseases of the stomach and intestines and his researches and writings on affections of these organs gave him an international reputation. He originated an instrumental method of investigating the duodenum by intubation in the human patient, and was the first to visualize and diagnose a gastric ulcer with the X-ray by means of the opaque meal. He established the relation between the secretion of the gastric juice and that of the salivary glands by the discovery of a substance in the salivary glands, the intravenous injection of which caused a secretion of gastric juice. Mikulicz's disease of the salivary glands, he found,



Portrait by L. C. Gray

John C. Hemminger

caused a loss of gastric secretion. He was a prolific writer on medical subjects. Among his better known works are: *The Special Pathology and Treatment of Organic Diseases of the Stomach* (1897); *Diseases of the Stomach*, 3rd edition (1900); *Diseases of the Intestines*, two volumes (1901-1902), and *The Master Minds of Medicine*. In addition to these text-books, he published more than one hundred original and experimental contributions in the medical periodicals of Europe and America. He was an associate editor of the *Archiv fuer Verdauungs-Krankheiten*, the *Archiv fuer klin. Med.*, and the *Zentralblatt fuer Stoffwechselkrankheiten*; and editor of the centennial volume issued in commemoration of the 100th anniversary of the founding of the University of Maryland. He held membership in many societies. He was past president of the American Gastro-Enterological Association, a member of the Medical and Chirurgical Faculty of Maryland, a fellow of the American Association for the Advancement of Science, an honorary member of the *Koeniglich Kaiserlich. Gesellschaft Oesterreicher Aerzte* and the *Gesellschaft fuer Innere Medicin und Kinderheilkunde*, both of Vienna, and of the *Congress fuer Innere Medicin* of Germany.

Dr. Hemmeter was a pleasing speaker, an indefatigable worker, an eminent scientist, an authority on diseases of the digestive tract, and an able teacher. He was a useful member of the Faculty of Physic, not only as a teacher but also as an administrator. The huge success of the centennial celebration was due largely to his leadership. Active almost to the end, he dedicated his energies without stint to the service of mankind.

Notable as was Dr. Hemmeter's professional career, he was hardly less distinguished as a pianist, musical critic, composer, biologist and medical historian. Ruhrah, in a critical review of Hemmeter's "*The Master Minds of Medicine*," says: The book is a valuable contribution to medical historiography and will place his name among the medical historians of the world.

During his active connection with the Faculty of Physic, Dr. Hemmeter used his great talents to place the University of Maryland upon the highest possible educational plane. By his death, the medical profession of Maryland has lost one of its most prominent, versatile, industrious and interesting members.

DR. SAMUEL THEOBALD

In the passing of Samuel Theobald, on December 20th, 1930, in the eighty-fourth year of his age, ophthalmology, general medicine, and a large circle of friends sustained a great loss.

He came from lines distinguished in the art and science of medicine. His father sprang from English stock. The first member of the Theobald family in this country, Clement Theobald, settled in lower Norfolk County, Virginia, in 1641. On his mother's side, his great grandfather, Dr. Nathan Smith, organized the Medical Schools of Yale, Dartmouth and Bowdoin, and assisted in the founding of the Jefferson Medical School of Philadelphia. He was one of the great pioneers of American Medicine. The grandfather of Dr. Theobald, Dr. Nathan Ryno Smith, called "The Emperor," cooperated with his father and other distinguished men in the organization of the Jefferson Medical College just mentioned. He was one of the pioneers in otology in America, and for nearly half a century was the central and dominant figure at the University of Maryland Medical School. The French gave him the title of the "Nestor of American Surgery".

Dr.. Samuel Theobald, son of Dr. Elisha Warfield Theobald and Sara Frances Smith Theobald, was born in Baltimore on November 12th, 1846. On April 30th, 1867, Dr. Theobald married Caroline Dexter DeWolf, of Bristol, Rhode Island—a happy union that lasted sixty-one years. He is survived by two daughters, one son, and eleven grandchildren.

In 1867, Dr. Theobald graduated in Medicine at the University of Maryland. Later, he studied the eye under Alt and Jaeger in Vienna, and at the Royal Ophthalmic Hospital, London. He was also a pupil of Politzer in otology. From 1894 until 1912, he was Clinical Professor of Ophthalmology and Otology in the Johns Hopkins University School of Medicine; from 1912 to 1925, Clinical Professor of Ophthalmology; and from 1889 to 1925, Ophthalmic Surgeon to Johns Hopkins Hospital. From 1925 until his death, he was Professor Emeritus of Ophthalmology. He also had many other important positions, such as Ophthalmic Surgeon to the Baltimore Eye, Ear and Throat Charity Hospital; Consulting Ophthalmologist and Aural Surgeon to South Baltimore General Hospital. He was at one time President of the American Ophthalmological Society and the Medical and Chirurgical Faculty of Maryland. He



Wm. L. G. Cook

also held membership in a number of scientific societies—the American Medical Association and the American Otological Society, etc. Dr. Theobald contributed many articles to the leading text-books and journals; in 1906, he published his excellent text-book, "Prevalent Diseases of the Eye". This volume of 551 pages is full of helpful suggestions to the general practitioner, and to the ophthalmologist. He did much to popularize boric acid. His genius is memorialized in his method of treating closure of the tear ducts, and in "Theobald's Lachrymal Probes". In his scientific work, he showed the capacity for infinite pains; in his ethical relations to his colleagues, he set a high ideal; to his friends he showed a character full of charm. "A lovelier gentleman—the spacious world cannot again afford."

DR. SAMUEL T. EARLE

Dr. Samuel T. Earle was born near Centreville in Queen Anne County, Maryland, on December 2, 1849. He was educated at the Maryland Agricultural College, 1863; Wyer's Military Academy, Westchester, Pennsylvania, 1864-1865; and Washington College, Maryland, 1866-1867. He studied medicine under a preceptor during 1867 and 1868 and graduated at the University of Maryland School of Medicine in 1870. He married Mary Isabel Ringgold of Kent County, Maryland, January 2, 1872 (died 1890); and Dinette Tyler of Norfolk, Virginia, on April 21st, 1891, who survives him.

After his graduation, Dr. Earle practiced in Queen Anne County at Centreville, Maryland, for 15 years. Afterward, he came to Baltimore and, after special preparation, began the practice of proctology in which he was eminently successful. He continued in active practice until his death, which occurred suddenly on February 19, 1931.

Dr. Earle was connected with the Baltimore Medical College from 1896 to 1907 in the Departments of Physiology and Proctology. He was a member of the following: American Proctologic Society (President, 1902-1903); Medical and Chirurgical Faculty of Maryland (President, 1905-1906); and the American College of Surgeons. He was the author of "Diseases of the Anus, Rectum and Sigmoid" 1911, and the joint author with James P. Tuttle of "Surgical Diseases and Wounds of the Anus and Rectum" (Volume VII, American Practice of Surgery) 1910.



DR. SAMUEL T. EARLE

As a teacher, Dr. Earle was very popular and greatly beloved by his students. Whether as a teacher, citizen or friend, he exhibited a kindliness and friendliness which endeared him to all. His fairness, integrity and intellectual honesty were never questioned. He was invariably on the side of increased educational qualification for the practitioner of medicine and was the President of the first State Board of Medical Examiners of Maryland organized in 1892. Few men in the medical profession had a wider acquaintance or a greater number of sincere friends. A great believer in outdoor exercise and a follower of sports, he rode a bicycle fairly constantly until he was 75 years of age and had several times since he was 80 years of age ridden to hounds for hours at a time. In addition to his professional work and sports, he was greatly interested in agriculture and carried this on very successfully on his ancestral farm on the Eastern Shore.

The medical profession has sustained a great loss in the passing of Dr. Earle; and a host of friends will miss his genial, happy, friendly greeting and companionship to which they have been accustomed for so many years.



BOOK REVIEW

A PRACTICAL TREATISE ON DISEASES OF THE DIGESTIVE SYSTEM:
By L. Winfield Kohn, M.D., F.A.C.P. Formerly Assistant in the Gastro-Intestinal Clinic, Johns Hopkins Hospital, Baltimore, Md. Present Chief of Gastro-Intestinal Clinic, Lebanon Hospital, New York City. Complete in two Royal Octavo volumes of 1,125 pages. Illustrated with 542 engravings. Cloth bound. Price \$12.00 net, Philadelphia. F. A. Davis Co.

The author has written a very comprehensive treatise on "Diseases of the Digestive System". It is well conceived and concisely written. The first few chapters cover the fundamental principles of gastro-enterology and should appeal especially to the student. The chapter on Fluoroscopy and X-ray is very full and profusely illustrated with characteristic pictures of various digestive lesions. The chapter on "Dietary Considerations" is most extensive, covering the entire field of food, its constituents, diets in various diseases; methods of feeding, including duodenal, jejunal, subcutaneous, and intravenous forms as well as by nutrient enemata. The chapter on "Therapeutic Considerations" is very illuminating since it presents all forms of treatment utilized in the practice of gastro-enterology, including lavage, diathermy, local instillations, irrigations, biliary drainage, etc.

The only criticism, if any, that can be made of this set of books is firstly, that it would be more practical and useful to have prepared the work in one volume; and secondly, more space should have been devoted to the treatment of such subjects as gastric hemorrhage and ulceration and fewer pages given over to intra-gastric photography and gastroscopy, since the latter are diagnostic methods which are still of academic value only.

In the section on "Clinical and Pathological Considerations" the author discusses the symptom of pyrosis, attributing this condition to hyperchlorhydria and recommends bicarbonate of soda for its relief. Numerous cases have come under the reviewer's observation which have been due to Achylia Gastrica and have yielded to the internal administration of dilute muriatic acid.

On the whole, this treatise is a valuable addition to the none too numerous texts on this specialty and it can be well recommended to the student, general practitioner and gastro-enterologist. As with most works on this subject, very little is said of differential diagnosis, a consideration of which is very important.

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The names listed above are our officers for the term beginning June 1, 1930, and ending June 1, 1931.

LEST YE FORGET

At a meeting of the Committee composed of various Alumni throughout Baltimore and other surrounding communities, it was decided that the Spring Activities for this year are to begin on the morning of June 4th, at which time the Alumni gathering from in and out of the city will register at the Alumni House, 519 W. Lombard Street. Following this a Luncheon will be given by the University Hospital for visiting Alumni. Immediately after the Luncheon the annual meeting will be held in the Chemical Amphitheatre of the School, following which a clinic will be given by Dr. Allen Graham of the Cleveland Clinic, Cleveland, Ohio. His subject will be Goitre. Only one clinic will be given this year, since it is the desire of the Committee not to tire anyone and after Dr. Graham's clinic there will be ample time to prepare for the annual banquet which is to be held at the Lord Baltimore Hotel at 7 P. M. We are extremely anxious that all members possible be present, those wishing to attend

will please favor us by sending in your check for \$5.00 by return mail and we will send you your ticket. We are expecting to have rather a large crowd this year.

THE NEW QUARTERS OF THE DEPARTMENT OF BACTERIOLOGY

Since the amalgamation of the College of Physicians and Surgeons with the School of Medicine of the University of Maryland, the Department of Bacteriology has occupied temporary quarters which, for a number of years, were widely separated from the rest of the school. Before the beginning of the present academic year, however, it was moved into the building on Greene near Lombard Street. This, formerly known as the Dental Building, was completely remodeled and newly equipped during the past summer. The department uses about twenty-five per cent of this building.

In the basement is a storeroom of adequate size for supplies and on the first floor is the office of the head of the department. Also on this latter floor is the library which is used conjointly with the Department of Pathology.

On the next floor, running the entire length of the building and fronting on Greene Street, is a large and modernly equipped students' laboratory. This was so planned that not only Bacteriology and Immunology can be taught in it but also General Pathology and Clinical Pathology. The inserted illustration presents a clear picture of this room and its equipment.

On the second floor, to the east of the students' laboratory, is the preparation and sterilization room. This is used by the students in the preparation and sterilization of culture media. This room, like the laboratory, is large enough to accommodate comfortably 100 students. All the apparatus installed in this room is new and of modern type.

Opening on the corridor connecting the students' laboratory with their preparation room are two other rooms, one an incubator used by the students for their bacterial cultures, the other a refrigerator for the storage of culture media and sera.

To the north of the students' preparation room are two laboratories for the use of members of the teaching staff of this department.



BACTERIOLOGICAL LABORATORY

Also adjoining it on the north is a room used by the laboratory technician for the preparation of materials for use by the department.

Such improvements in environment and equipment are naturally conducive to better work on the part of the student and the staff.

WASHINGTON, D. C., ALUMNI CELEBRATE

On the evening of March 25th, there was a meeting held in the University Club, Washington, D. C., consisting of a number of the Washington Alumni from the University of Maryland, College Park, and the combined schools of Baltimore. The purpose of the meeting was to honor the members of the basketball team of College Park who had just returned from Atlanta after winning the Intercollegiate Basketball Championship of the Southern Conference. The meeting was well attended and there was much enthusiasm manifested. President Pearson and Coach Rip Miller from the Naval Academy were present and spoke during the meeting. The other speakers consisted of Dr. Symons of College Park, who is Secretary of the Alumni Association from the undergraduate school. Dr. A. W. Valentine of Washington, D. C., was elected Vice-President of the College Park branch for the coming year. Mr. Miller spoke of his experiences in the Notre Dame College and expressed his opinion as to the value of participation in all athletics during one's college career. He is of the opinion, as was Knute Rockne, that college athletics are not over-emphasized. He feels that he got something out of taking part in the athletics in Notre Dame that has been of value to him that could not have been obtained in any other way. As a matter of fact, what he learned on the football field, he now puts into practice in his daily life, not only in coaching, but in general affairs. He spoke in great anticipation of the Maryland-Navy game that is to be played at College Park next October and further stated that the Navy team is now training for the game because they realize they have a hard fight on their hands.

In behalf of the Medical Alumni Association, we wish to congratulate the Athletic organization at College Park for their accomplishments in winning this Southern Intercollegiate Basketball Championship.

SOUTHERN MEDICAL ASSOCIATION MEETING

During the annual meeting of the Southern Medical Association in Louisville, Ky., a banquet was held by the Alumni Association of the University of Maryland at the Kentucky Hotel at 7 P. M. on November 12th. Dr. Joseph M. Frehling, Louisville, class of 1924, arranged a very attractive menu and made a very delightful toastmaster. Many of the Baltimore men were present, as well as a number of Alumni from the adjoining states. The oldest Alumnus present was Dr. R. M. G. Carruth of New Roads, Louisiana, class of 1880. His talk of the evening was most interesting. Before the evening was over, however, many other interesting speeches were made. In fact, every one had a chance to speak. Those present were as follows:

Dr. W. C. Ashworth, Greensboro, N. C.; Dr. Jos. M. Frehling, Louisville, Ky.; Dr. E. A. Looper, Baltimore, Md.; Dr. Henry J. Walton, Baltimore, Md.; Dr. Marion Y. Keith, Greensboro, N. C.; Dr. Herbert Schoenrich, Baltimore, Md.; Dr. H. M. Robinson, Baltimore, Md.; Dr. Ben Gold, Shelby, N. C.; Dr. Melvin Rosenthal, Baltimore, Md.; Dr. Harold E. Wright, Baltimore, Md.; Dr. Elmer B. Freeman, Baltimore, Md.; Dr. Howard E. Ashbury, Baltimore, Md.; Dr. H. E. Hasseltine, U. S. P. H. S., Washington, D. C.; Dr. A. V. Gundry, Baltimore, Md.; Dr. Geo. S. Sargent, Baltimore, Md.; Dr. W. M. MacMillan, Charleston, W. Va.; Dr. Chas. E. Copeland, Charleston, W. Va.; Dr. R. S. Griffith, Basic City, Va.; Dr. Geo. L. Faucett, Gadsden, Ala.; Dr. J. A. Guthrie, Huntington, W. Va.; Dr. C. A. Ray, Charleston, W. Va.; Dr. Harvey G. Beck, Baltimore, Md.; Dr. G. E. Bennett, Baltimore, Md.; Dr. Jas. T. Marsh, New Windsor, Md.; Dr. C. A. Andrews, Tampa, Fla.; Dr. Henry F. Fitzhugh, Westminster, Md.; Dr. F. D. Wilson, Norfolk, Va.; Dr. Julius Friedenwald, Baltimore, Md.; Dr. C. L. Owens, Cumberland, Md.; Dr. F. J. Kirby, Baltimore, Md.; Dr. H. R. Black, Spartanburg, S. C.; Dr. R. G. Carruth, New Roads, La.

THE WESTERN MARYLAND BRANCH OF THE UNIVERSITY OF MARYLAND ALUMNI ASSOCIATION HOLDS BANQUET AND ELECTION OF OFFICERS

Dr. Arthur H. Hawkins was elected president of the Western Maryland branch of the University of Maryland Alumni Association, at the third annual banquet of the organization, held Saturday night, February 7, 1931, at the Cumberland Country Club.

Other officers elected were: Dr. Howard L. Tolson, Dr. A. G. T. Twigg, Clarence Lippel, Dr. Lester Batie and J. A. Kefauver, vice-presidents; Walter C. Capper, secretary; J. Wesley P. Somerville, treasurer.

United States Senator Millard E. Tydings, of Maryland, was the principal speaker. He delivered a forceful and interesting talk on the Federal Government and declared that the government has too many other matters for its consideration to be hampered with the enforcement of the prohibition laws. Senator Tydings said the liquor problem should be referred back to the states.

F. Brooke Whiting was toastmaster and introduced Dr. Raymond A. Pearson, president of the University. Other speakers were: H. C. Byrd, vice-president and director of athletics; Dr. J. M. H. Rowland, dean of the School of Medicine; Dr. Arthur M. Shipley, professor of surgery; Dr. J. Ben Robinson, dean of the school of dentistry; Dr. A. G. Dumez, dean of the School of Pharmacy; Dr. Robert Hall, assistant dean of the Law School.

The following graduates, many of whom were accompanied by their wives, attended the banquet:

College Park Schools

Walter Bowers, Bruce R. Billmeyer, Mylo S. Downey, Miss Elizabeth Edminston, Miss Blanche Henderson, Miss Yola Hudson, Miss Rose Alice Laughlin, R. F. McHenry, Carl F. Slemmer, W. A. S. Somerville, J. W. P. Somerville, R. E. Sliger, R. Stubbs, A. G. Wallis, Miss Grace Maxwell, John E. McDonald, Carl N. Everstine, Miss Hazel Dawson, Miss Isabelle Bewick, Miss Ruth B. Engle, Miss Theresa Nicht, Miss Loretta Hannon, Robert P. Kapp, H. H. Stanton, James Bradley, S. S. Ternent, J. A. Kefauver, Miss Mary E. Murray, Ralph Webster, Miss Barbara Schilling.

School of Medicine

Dr. R. C. Bowen, Dr. S. E. Enfield, Dr. Joseph P. Franklin, Dr. Wm. A. Gracie, Dr. A. H. Hawkins, Dr. L. J. Lanich, Dr. F. A. Murray, Dr. C. L. Owens, Dr. H. T. Robinson, Dr. John G. Selby, Dr. G. O. Sharrett, Dr. G. F. W. Snyder, Dr. H. L. Tolson, Dr. Frank M. Wilson, Dr. Thomas Bess, Dr. H. J. Bostetter, Dr. P. R. Wilson, Dr. A. J. Fazenbaker.

School of Dentistry

Dr. J. R. Cook, Dr. A. P. Dixon, Dr. K. P. Heintz, Dr. E. E. Loar, Dr. J. C. McAdams, Dr. L. W. Patterson, Dr. A. G. T. Twigg, Dr. H. R. Williams, Dr. H. B. Wood, Dr. J. W. Eagle, Dr. W. R. Keyser, Dr. J. G. Sowers.

School of Law

Walter C. Capper, Clarence Lippel, D. W. Sloan, F. Brooke Whiting, H. P. Whitworth, Estel C. Kelley, Saul Praeger.

School of Pharmacy

Dr. Lester Batie and Dr. Irving Millenson.

School of Nursing

Mrs. Paul R. Wilson and Mrs. Estel C. Kelley.

ITEMS

The annual banquet of the Baltimore Medical Club, which is composed of graduates of the various Baltimore Medical Classes, was held at the Barbizon Plaza Hotel, New York City, on Saturday evening, February 14th.

Among other guests was Dr. Frederick V. Beitler, of Baltimore, B. M. C., class of 1906. About one hundred medical men were present, who came from various parts of New England, New York and New Jersey.

This club is one of the outstanding ones in the metropolitan district of New York and holds its annual dinner usually in February, or preceding Lent.

All physicians who are graduates of Baltimore schools and members of their county medical societies are eligible for membership.

The Class of 1906 of the Baltimore Medical College is arranging a reunion of its members, to be held on graduation day with a banquet which will be held the same evening in Baltimore.

Dr. Frederick V. Beitler, of the Medical Arts Building, Baltimore, is Chairman of the Committee. Dr. Thomas M. Pascall, of Newark, N. J., is in charge of the New England division.

It is requested that all graduates of this class communicate with either of the above named physicians.

Dr. T. M. Davis, Greenville, S. C., class of 1914, has been appointed a member of the staff of the Crowell Clinic, Charlotte, N. C. He will have charge of the department of prostatic resection and operative cystoscopy.

In a letter to Dean J. M. H. Rowland, dated April 7, 1931, Dr. John Henry Orff, Reading, Pa., writes: Last Saturday I called on Dr. Raymond Hussey, University of Maryland, class of 1911, now professor of pathology, Yale University School of Medicine, at New Haven. He surely has advanced in the medical world.

At the same time Dr. Orff kindly supplied the following clipping from the Reading Eagle, announcing the appointment of Dr. Charles Cleveland Custer, B. M. C., class of 1909, as superintendent of the Berks County Tuberculosis Sanitarium, on Neversink Mountain, Pa.:

Upon the recommendation of the Board of Directors of the institution, the county commissioners met with Andrew J. Bower, chairman, and appointed Dr. C. C. Custer, chief of medical service at the State Sanitarium at Mont Alto, Pa., to the position.

Dr. Custer comes to Reading bearing the reputation of one of the most competent tuberculosis specialists in the State. He brings with him the recommendations of a number of superintendents of sanitariums and hospitals, as well as those of the State Department of Health.

Dr. Custer is a graduate of Franklin and Marshall College, Lancaster, and of the medical department of the University of Maryland, class of 1909. He passed the examinations of the State Medical Board of Pennsylvania the same year and engaged in private practice for a period of 10 years, six of which were spent at Johnstown.

In 1919 he accepted the position as resident physician at the Cresson State Sanitarium. In 1923 he was transferred by the State Department of Health to Mont Alto, where he was assistant to Dr. R. H. McCutcheon, superintendent.

Dr. McCutcheon highly recommended his assistant to the local Board, stating that he was sorry to lose the services of Dr. Custer and that Berks was fortunate in obtaining them.

"I believe that Dr. Custer is one of the best tuberculosis men in the State," declared Dr. McCutcheon to the Board. "He thoroughly understands all special lines of treatment, such as pneumothorax, heliotherapy, and has done especially good work in our nose and throat department."

"I do not hesitate to say that the Department of Health will regret losing Dr. Custer at Mont Alto," Dr. Theodore B. Appel, secretary of health, told the Board.

"I regret to see the State lose him," wrote Dr. William G. Turnbull, superintendent of the Philadelphia General Hospital. "Dr. Custer has had long experience in his line."

The following communication was received from Dr. J. F. Huey of Hillsboro, Alabama.

From the University of Maryland School of Medicine there are 17 graduates and only 3 of which are not members of the State Medical Association. From the Baltimore Medical College there are 11 graduates and three are not members of the State Medical Association, and from the College of Physicians and Surgeons there are 10 and all are lined up with organized medicine in Alabama.

Dr. Huey graduated from the College of Physicians and Surgeons in 1887. We are indeed glad to receive this letter from Dr. Huey and also pleased to note that the President of the State Medical Association is Dr. W. G. Harrison who is an Alumnus of our school of the class 1904.

Dr. A. Aldridge Matthews, Spokane, Washington, class of 1900, formerly superintendent of the University of Maryland Hospital, was a recent visitor to Baltimore.

Dr. David E. Hoag, University of Maryland, class 1896, 15 East 48th Street, New York City, has recently returned from Europe. He traveled through Belgium, Holland, Germany, Switzerland, Italy and Spain. Among other institutions visited was the Colony of Gheel in Belgium, a unique and original colony for the care of the insane, where they are taken care of in private homes, in preference to institutional environment. Dr. Hoag had audience with the Pope at the Vatican at Rome, and also attended the Passion Play at Oberammergau.

Dr. Hoag has for several years been Clinical Professor in the Department of Nervous and Mental Diseases at the New York University and Bellevue Hospital Medical College, New York City, and is also Clinical Professor at the New York Polyclinic Medical School and Hospital, and holds the rank of Major, Medical Reserve Corps, U. S. Army.

DEATHS

- DR. REZIN ALEXANDER HAMMOND, Jessups, Md.; class of 1892; aged 58; died, February 27, 1931, of pulmonary infarction, chronic myocarditis and generalized arteriosclerosis.
- DR. SIEGMUND ALBERT REICH, Jersey City; N. J.; P. & S., class of 1902; on the staff of the New York Post Graduate School and Hospital; aged 52; died, February 5, 1931, of angina pectoris.
- DR. WALTER M. DALBEY, Wheeling, W. Va.; B. M. C., class of 1902; aged 56; died, January 9, 1931, of pernicious anemia.
- DR. WILLIAM JEFFRIES NEWBILL, Irvington, Va.; class of 1868; Confederate veteran; aged 84; died, December 15, 1930.
- DR. CHARLES W. NOSS, Altoona, Pa.; P. & S., class of 1907; aged 49; died, October 26, 1930, of carcinoma of the colon.
- DR. THEODORE CLARENCE HARTER, Bloomsbury, Pa.; P. & S., class of 1881; formerly a member of the State Legislature; aged 78; died, in January, 1931, of paralysis.
- DR. HUGH PAYNE HIRST, Leetown, W. Va.; B. M. C., class of 1895; aged 71; died, December 20, 1930, of cerebral hemorrhage.
- DR. BERNARD W. SHIREY, York, Pa.; P. & S., class of 1895; aged 58; died, December 5, 1930, of peritonitis.
- DR. ADAM T. MAIRS, Charleston, W. Va.; P. & S., class of 1882; aged 74; died, January 10, 1931, of cardiac disease.
- DR. BYRON M. MOULTON, Springvale, Me.; P. & S., class of 1894; aged 65; was found dead in his office, January 27, 1931. The Bulletin is indebted to Dr. W. B. Raymond, South Paris, Me., B. M. C., class of 1906, for the following notice which was clipped from the Sanford Tribune of January 29, 1931: The town was considerably stirred this week by the death of Dr. B. M. Moulton, a prominent physician. He was reputed to have been the first surgeon in the State of Maine to perform an operation for appendicitis. Dr. S. A. Cobb, of Sanford, county medical examiner, reported that Dr. Moulton had been dead about 24 hours when his body was found. His absence during the day was not noted, as the physician often confined himself to his laboratory for experiments and frequently made professional trips out of town. Death was due to natural causes. Dr. Moulton was born in South Sanford on June 5, 1865. Before taking up medicine he conducted a drug store in Springvale. He was graduated from the College of Physicians and Surgeons of Baltimore in 1894. Returning to town, he began his practice and earned the reputation of being one of the most skillful surgeons in this section. At one time he conducted a private hospital in Springvale. A student to the end, the doctor continued to be absorbed in experimental work.
- DR. CHARLES HILL BROOKE, Brooklyn, Md.; class of 1891; aged 65; died, January 28, 1931, of gripe and internal hemorrhage.
- DR. FRANK A. SIGRIST, Baltimore, Md.; U. of Kansas, class of 1922, assistant in surgery, University of Maryland; aged 36; died, January 27, 1931, of pneumonia. He came to Baltimore in 1923 and for the next two years served as a surgical interne at St. Agnes Hospital, after which he engaged in the practice of his profession in Baltimore. For the past four years he had charge of a section of the third-year class in animal surgery. Those of his colleagues who knew him had learned to appreciate his high qualities of soul and mind. He was an excellent teacher of

the branch of medicine in which he was specializing. The school has lost a conscientious, earnest worker and the students a painstaking teacher.

- DR. GEORGE LEWIS LININGER, Frostburg, Md.; B. M. C., class of 1902; aged 57; died, September 22, 1930.
- DR. NOBLE HENRY ADSIT, Succasunna, N. J.; P. & S., class of 1886; formerly member of the board of education; aged 70; died, November 22, 1930, of pneumonia.
- DR. JOSEPH L. SHULER, Irmo, S. C.; Washington University School of Medicine, class of 1870; Confederate veteran; aged 84; died, December 24, 1930, of bronchopneumonia.
- DR. THOMAS ARTHUR GRIFFIN, Morganton, N. C.; class of 1907; aged 52; died, December 11, 1930, of cardiac disease.
- DR. JOSEPH EDWIN RATAJSKI, Scranton, Pa.; B. M. C., class of 1909; aged 52; died, December 21, 1930, of tuberculosis.
- DR. DAVID DAVIS, Philadelphia, Pa.; P. & S., class of 1886; aged 66; died, December 12, 1930, of cardiac disease.
- DR. PATRICK H. WALKER, Scranton, Pa.; B. M. C., class of 1904; aged 52; died, January 19, 1931, of nephritis.
- DR. JOHN W. N. FARROW, Washington, D. C.; P. & S., Class of 1879; aged 72; died, January 3, 1931, of chronic interstitial nephritis, arteriosclerosis and uremia.
- DR. RUFUS LEONIDAS ALLEN, Waynesville, N. C.; class of 1885; past president of the Haywood County Medical Society, formerly county superintendent of health and coroner; aged 66; died, January 8, 1931, of cardio-vascular-renal disease.
- DR. HIRAM WOODS, Baltimore, Md.; class of 1882 and B.A., Princeton University, 1879, emeritus professor of ophthalmology and otology at his alma mater; member of the House of Delegates of the American Medical Association in 1912 and chairman of the section of ophthalmology, 1912-1913; past president of the American Ophthalmological Society, 1919-1920; member of the American Academy of Ophthalmology and Oto-laryngology, the American College of Surgeons, the Southern Medical Association, the American Otological Society, the Baltimore City Medical Society, and of the National Council for the Prevention of Blindness; president of the Medical and Chirurgical Faculty of Maryland, 1906-1907; a member of its council from 1905 until his death and its chairman from 1907 to 1928, when he refused re-election; aged 73; died, January 15, 1931, of pneumonia.

Dr. Woods was the son of the late Hiram and Helen Chase Woods. Before entering Princeton in 1875, he was trained in the private school of the late George G. Carey. After receiving his bachelor of arts degree, he took a special course in biology at the Johns Hopkins University and then entered the University of Maryland Medical School, which gave him the degree of doctor of medicine in 1882.

Forty-two years later the institution conferred on him the degree of Doctor of Laws, in honor of his contribution to the field of eye surgery.

From 1882 to 1883 he was an interne at the City Hospitals, then known as Bay View. The next three years he was in service with the departments of dermatology and medicine at the University Hospital. It was not until 1885 that he abandoned general practice and adopted ophthalmology and otology as his specialty. He was identified with the University of Maryland from 1896 until 1920 as professor of ophthalmology and otology, and 1920 to 1931, emeritus professor of ophthalmology and otology.

Until 1888 he served as assistant demonstrator in anatomy at the University and from 1887 to 1894 he was professor of eye and ear diseases at the now defunct Woman's Medical College here.

Dr. Woods was clinical assistant in the Presbyterian Eye, Ear and Throat Charity Hospital from 1884 to 1894, when he was made full surgeon. He remained on the staff until 1917, when he resigned. From 1896 until 1919 he was chief ophthalmologist at the University Hospital, succeeding Dr. Julian J. Chisolm.

He had been in continuous practice here from 1883 until 1929 and had held many important posts in addition to those previously mentioned.

In 1886 he married Miss Laura Hall, of Baltimore.

In an editorial, *The Sun*, Baltimore, Saturday morning, January 17, 1931, eulogizes Dr. Woods, as follows:

Dr. Hiram Woods was among members of the medical profession who made the name of Baltimore nationally known over a long period of years. He helped make it known as the home of a distinguished body of scientists, surgeons, physicians and ophthalmologists devoted to the advancement of their art.

Dr. Woods began his medical career with a well grounded academic education and pursued his vocation with great diligence and thoroughness. Abandoning general practice almost half a century ago to devote his entire attention to ophthalmology and otology, he became one of the leading eye surgeons of the country, holding many important posts in the hospitals of this city and being honored repeatedly by national organizations with which he was associated. He was admired for his attainments and loved for his possession of the attributes which make the good physician a friend as well as an adviser in time of need.

- DR. EDWARD POWELL RIGGS, Birmingham, Ala.; P. & S., class of 1881; aged 72; died, December 2, 1930, of cerebral hemorrhage.
- DR. EPHRAIM CHARLES HELLSTERN, Hudson Heights, N. J.; B. M. C., class of 1904; formerly member of the school board and bank president; aged 51; died, January 2, 1931.
- DR. JOHN DAVIS DABNEY, Birmingham, Ala.; Washington University School of Medicine, class of 1872; veteran of the Civil and Spanish-American Wars; aged 81; died, December 25, 1930, of bronchopneumonia.
- DR. ALBERT S. NICHOLSON, Brooklyn, N. Y.; P. & S., class of 1880; aged 68; died, December 15, 1930, of chronic myocarditis and arteriosclerosis.
- DR. CORNELIUS S. FRANCKLE, Millville, N. J.; P. & S., class of 1900; aged 52; died, November 1, 1930, of cardiac disease. The readers of the *Bulletin* are indebted to Dr. Harvey S. Brown, 5 Club Place, Freehold, N. J., P. & S., class of 1899, for the following information which was clipped from Dr. Franckle's home town paper:

HEART ATTACK FATAL TO SURGEON

DR. CORNELIUS S. FRANCKLE DIES AFTER SHORT ILLNESS

After a serious illness of ten days, Dr. Cornelius S. Franckle, one of South Jersey's leading physicians, passed away on Saturday, November 1, 1930. He was apparently in excellent health until fatally stricken, as he was performing a surgical operation at the Millville Hospital, on October 21. Though at first he seemed to be improving, his condition soon became very alarming again. He failed to respond to treatment and gradually lost ground to the end. Dr. Franckle had practised medicine and surgery in Millville for the past thirty years. Few men devoted themselves to a profession as closely as he. He was seldom absent from his practice for even a day. He was fifty-two years of age and was born in Glassboro, the son of Louis and May Franckle. After graduating with high honors from the Millville High School, he became a student at the College of Physicians and Surgeons of Baltimore, from which institution he was graduated with the degree of M.D., at the age of 22. At the last meeting of the Cumberland County Medical Society, N. J., he was elected its president for the ensuing year. He is survived by a widow, Mrs. Harriet Young Franckle, to whom he was married in 1903, and two sons.

DR. ROBERT WILKINSON JOHNSON, Baltimore, Md.; U. of Pa., class of 1879; formerly professor of the principles and practice of surgery at the Baltimore Medical College; aged 76; died, November 13, 1930, of carcinoma of the liver and myocarditis. Dr. Johnson was for many years a prominent surgeon of Baltimore. He was a member of the Medical and Chirurgical Faculty of Maryland and its president, 1894-1895, a member of the American Surgical Association and of the American Orthopedic Association, and for a time, Medical Director of the First Brigade of the Maryland National Guard.

He was a son of the late William Fell Johnson and Mrs. Ann Mifflin Barker Johnson, and was born at the family estate, Rockland, Baltimore County, Maryland. During his youth, he attended Lockwood's private school at Garrison Forest, Baltimore County, and St. Paul's School, Concord, N. H. He was graduated from Princeton in 1876. He attended the University of Maryland School of Medicine 1876-1877, but took the last two years of his course in medicine at the University of Pennsylvania, from which institution he was graduated with the degree of M.D., in 1879. The same year he married Miss Julia Brock of Philadelphia. Dr. Johnson then went to Vienna, Austria, where he continued his studies for a year, after the completion of which he returned to Baltimore to engage in the practice of surgery. He was the father of Dr. Robert W. Johnson, Jr., Johns Hopkins University, class of 1917, professor of orthopedic surgery, at the University of Maryland.

DR. B. FRANK HORNE, Conway, N. H.; P. & S., class of 1893; aged 66; died October 25, 1930, of carcinoma of the prostate gland.

DR. GRAYSON R. GAVER, Cincinnati, Ohio; class of 1898; aged 56; died, November 26, 1930, of cardiac disease.

DR. CALVIN GRIER TODD, Belton, S. C.; class of 1902; aged 52; died, December 12, 1930, of myocarditis.

DR. JOHN MILTON LONG, Carrollton, Ohio; P. & S., class of 1885; aged 69; died, October 11, 1930, of cardiac disease.

DR. JAY HOWARD IGLEHART, Baltimore, Md.; class of 1903; medical counsel to the State Insurance Commission; aged 55; died, January 13, 1931, of coronary thrombosis. He was the husband of Nancy Kinnirey, University of Maryland Training School for Nurses, class of 1902, who survives him.

DR. JAMES W. KELLY, Big Stone Gap, Va.; class of 1887; aged 69; died, December 11, 1930, of pneumonia.

DR. JACOB FLETCHER SOMERS, Crisfield, Md.; class of 1885; aged 71; died, in October, 1930, of chronic myocarditis and acute cardiac dilatation.

DR. PERCY JOHN McELRATH, Bramwell, W. Va.; P. & S., class of 1893; also a dentist; aged 60; died, the latter part of 1930, of cardiac disease.

DR. WILLIAM H. WARD, Plymouth, N. C.; class of 1881; aged 73; died, November 9, 1930, of angina pectoris.

DR. HARRY STUNKARD, Avella, Pa.; P. & S., Class of 1896; aged 62; died December 6, 1930, of peritonitis consecutive to an appendectomy. He was a son of James and Ellen Stunkard, and was a native of Jefferson County, Pa., where he was born, September 5, 1868. After attending the public schools, he entered a medical college at Philadelphia and graduated from that institution. He then matriculated at the College of Physicians and Surgeons of Baltimore and completed his course there. After receiving his degree, he served an internship in the West Penn Hospital, Pittsburgh. Dr. Stunkard located at Avella in 1905. For a number of years he was the mine physician for practically all of the mines in that section, but for the past few years has devoted his time to general

practice. It can be truly said that Dr. Stunkard was one of the old type country doctor, as no night was too stormy, no mud too deep or the distance too far for him to answer a call whether the patient be rich or poor. He was considered the friend of the poor man. His services will be greatly missed throughout the western end of the county. Dr. Stunkard was serving as supervisor of Independence Township at the time of his death. He was deeply interested in the good road movement and in the providing of better highways for the people of his district. He was largely responsible for the reddog roads that have been built in that township during the past few months.

- DR. WILLIAM TAFT SLAYTON, Morrisville, Vt.; B. M. C., class of 1894, and Harvard University Medical School, 1896; served during the World War; formerly member of the state legislature and state board of health; aged 61; died, March 3, 1931, of chronic myocarditis.
- DR. CALVIN W. CANAN, Orkney Springs, Va.; B. M. C., class of 1891; aged 65; was killed in February, 1931, in an automobile accident.
- DR. EDGAR SHIRLEY PERKINS, Baltimore, Md.; class of 1907; aged 62; died, March 7, 1931, of cardiac disease.
- DR. HOWARD A. HANAFORD, Newport, N. H.; B. M. C., class of 1900; past president of the Sullivan County Medical Society; aged 55; died, February 9, 1931, of meningitis consecutive to influenza.

The following tribute to Dr. Hanaford appeared in the Claremont, New Hampshire, Daily Eagle, February 17, 1931:

Dr. Howard A. Hanaford, a resident of Newport for the past 28 years, and one of the most prominent of New Hampshire physicians and surgeons, died February 9, following a few days' illness with a complication of diseases.

Dr. Hanaford was born in New Hampton, January 12, 1875, the son of A. R. and Caroline (Ward) Hanaford. He attended the schools at New Hampton, and also studied at Dartmouth and the University of Vermont, and was graduated from the Baltimore Medical College with the class of 1900.

Dr. Hanaford was a director of the Citizens' National Bank, past president of the Sullivan County Medical Society, a member of the New Hampshire Medical Society, of the American Medical Association and of the Mt. Vernon Lodge, A. F. & A. M.

By a great number of New Hampshire people, Dr. Hanaford will be remembered as a trusted and beloved physician and surgeon. For a number of years, and up until his death, he was a member of the staff at the Carrie F. Wright Memorial Hospital. And it was while serving in this capacity that his fame as a surgeon became recognized by surgeons everywhere. His judgment was sound, his honesty unquestioned, and his rapid, sure surgical skill unsurpassed. His refined sympathy, genial personality, and sacrificial efforts as a physician endeared him to his patients and inspired the confidence of the town and community in his ability. He was more than a trusted physician and surgeon; he was a great hearted friend.

- DR. EDWIN M. HOLLINGSWORTH, Mt. Airy, N. C.; P. & S., class of 1866, aged 65; died, February 10, 1931, of a self-inflicted bullet wound.
- DR. SAMUEL JOSEPH CHESTNUT, Bainbridge, Ga.; class of 1892; aged 68; died, February 10, 1931, of uremia.
- DR. RICHARD B. HENDERSON, Franklinton, N. C.; class of 1884; aged 73; died, February 19, 1931.
- DR. JAMES RUFUS GORDON, Jamestown, N. C.; B. M. C., class of 1891; formerly a member of the state legislature and the state board of health; aged 73; died, February 20, 1931, of cerebral hemorrhage.
- DR. SAMUEL T. EARLE, Baltimore, Md.; class of 1870; president of the Medical and Chirurgical Faculty of Maryland, 1905-1906, and its vice-president, 1900-1901 and 1902-1903, past president of the American Proctologic Society, member of the American College of Surgeons and formerly professor of physiology and diseases of the rectum, Baltimore Medical College; aged 81; died, February 19, 1931, of angina pectoris. Dr. Earle was born in Queen Anne's County, Maryland, in 1849. He

received his early education at Wyer's Military Academy, Westchester, Pa., Washington College, Maryland, and the Maryland Agricultural College. After graduating in medicine, he practiced for some time in his native county before moving to Baltimore. He spent many week-ends on the Eastern Shore at his farm, Chatfield, part of the original Earle homestead, Melfield, which has been in the family since the Revolutionary War. Dr. Earle was one of that fast disappearing type of physician, the old time doctor, dignified, kindly, cultured, self-respecting and respected. His death is a distinct loss to the community and to the profession of which he has been an honored member for more than sixty years. To know him, was to love him.

DR. JOHN C. HEMMETER, Baltimore, Md.; class of 1884; emeritus professor of medicine at his alma mater, member and past president of the American Gastro-Enterological Association, author, teacher, scientist and musician; aged 68; died, February 25, 1931, of gastric carcinoma. On November 15, 1905, a number of his friends and former pupils celebrated his twentieth doctorate anniversary by presenting to him an oil painting of himself. The presentation speech was made by Surgeon General Walter Wyman of the United States Marine Hospital Service, in which he paid Dr. Hemmeter the following glowing tribute: "You have demonstrated in your life the great truth, that a man may be a great physician, yet eminent in other walks of life, meeting the social demands of his nature, loving melody, and cultivating to a high degree the love of the beautiful and good as well as the true."

The following highly complimentary eulogy appeared in the editorial columns of the Baltimore News, February 26, 1931:

DR. HEMMETER'S DEATH

The death of Dr. John C. Hemmeter after a prolonged illness removes from the ranks of the medical profession in this city not only one of its conspicuous members but one of its most versatile figures and most interesting personalities.

It is not uncommon for a physician, in general practice, to vary the dull routine of professional life by taking up music, art, or literature as an accomplishment. It is less frequently the case, however, that an original research worker like Dr. Hemmeter, who was also a busy practitioner, the holder of a professor's chair in a prominent medical college and the head of a large hospital, can afford time for such relaxation.

With Dr. Hemmeter, music was not a mere relaxation. He had studied it seriously abroad and was a composer of merit. His cantata, "Hymn to Hygeia," was produced before the American Medical Association convention in Baltimore, in 1896, and later was sung in Leipzig.

Dr. Hemmeter's medical training was obtained at the University of Maryland, in which institution he later filled with distinction a professorship.

His original investigations and writings in the field of diseases of the stomach gave him high standing in his specialty, and his literary work in biography and criticism was of very respectable merit. He was the recipient of degrees from Johns Hopkins and St. John's College and a member of many scientific societies.

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SPRING ACTIVITIES

The President and Board of Directors of the Alumni Association, together with the Committee on Spring Activities, the Dean and Medical Council of the Medical School of the University of Maryland cordially invite you to attend the Spring Activities.

PROGRAM

June 4th, 1931

- 9:00 A. M.-1:00 P. M.—Registration at the Medical Alumni House, directly opposite the Administration Building, University of Maryland, Lombard and Greene Streets.
- 1:00 P. M.—Luncheon at the University Hospital (Complimentary).
- 2:00 P. M.—Annual Meeting of the Medical Alumni Association, University of Maryland, in the Chemical Amphitheatre.
- 3:00 P. M.—Clinic by Dr. Allen Graham of the Cleveland Clinic, Cleveland, Ohio.
- 4:00-7:00 P. M.—Intermission.
- 7:00 P. M.—Annual Banquet at the Lord Baltimore Hotel.
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GUESTS OF HONOR

R. A. PEARSON,

President of the University of Maryland

Graduates of 1931 School of Medicine, University of Maryland

SPEAKERS

R. A. PEARSON,

President of the University of Maryland

A. J. LOMAS, M.D.,

Superintendent of the University Hospital

June 5th, 1931

Clinics will be given for the benefit of the visiting Alumni at the University, Mercy, St. Joseph's, Sinai and Maryland General Hospitals.

June 6th, 1931

4:00 P. M.—Commencement—Lyric Theatre.

Secretary of the Medical Alumni Association:

Kindly send.....ticket... for the Alumni Banquet of the Medical Alumni Association, University of Maryland, to be held at the Lord Baltimore Hotel, Thursday evening, June 4th, 1931, at 7:00 P. M.

will
I or be present for the Luncheon.
will not

Enclosed please find subscription... at \$5.00 per ticket.

Name

Address

(Detach and mail to: Medical Alumni Association,
519 West Lombard Street, Baltimore, Maryland.)

Programs may be obtained at the time of registration.



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